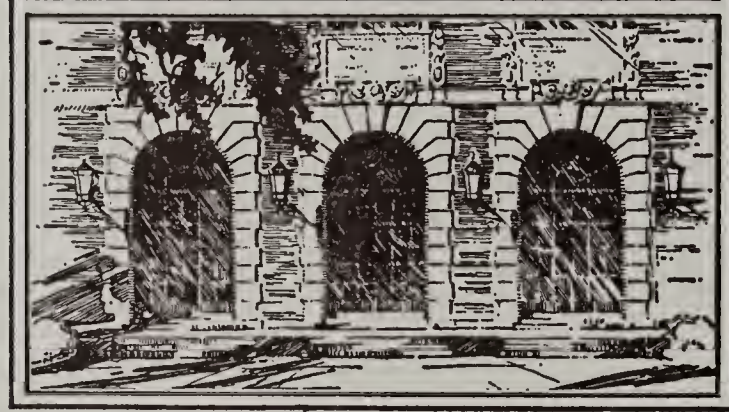
LIBRARY OF THE
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

610.5
AM
v. 7
no. 1-26
cop. [redacted] 6



THE JOURNAL

THE LIBRARY OF THE
OCT 2 1934
UNIVERSITY OF ILLINOIS

OF THE

American Medical Association.

CONTAINING

THE OFFICIAL RECORD OF ITS PROCEEDINGS,

AND THE

REPORTS AND PAPERS PRESENTED IN THE SEVERAL SECTIONS.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS, M.D., LL. D.

ASSISTED BY WM. G. EGGLESTON, A.M., M.D.

VOLUME VII.

1886.

CHICAGO:
PRINTED AT THE OFFICE OF THE ASSOCIATION.
1886.

"*The American Medical Association, though formally accepting and publishing the reports of the various Standing Committees (and Sections), holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except otherwise decided by special resolution.*"—TRANSACTIONS, 1851.

CONTRIBUTORS TO VOLUME VII.

Adolph Alt, M.D., St. Louis, Mo.
S. T. Armstrong, M.D., United States Marine Hospital Service.
J. R. Barnett, M.D., Neenah, Wis.
J. M. Barton, M.D., Philadelphia, Pa.
D. H. Batchelder, M.D., Providence, R. I.
Wm. T. Belfield, M.D., Chicago, Ill.
Boerne Bettmann, M.D., Chicago.
Seth S. Bishop, M.D., Chicago.
Alexander Boggs, M.D., Paris, France.
L. Bremer, M.D., St. Louis.
Bedford Brown, M.D., Alexandria, Va.
T. R. Buckham, M.D., Flint, Mich.
Henry T. Byford, M.D., Chicago.
John T. Carpenter, M.D., Pottsville, Pa.
P. S. Conner, M.D., Cincinnati, O.
Richard H. Day, M.D., Baton Rouge, La.
Nathan S. Davis, M.D., Chicago.
Nathan S. Davis, Jr., M.D., Chicago.
Frederick S. Dennis, M.D., New York City.
LeRoy S. Dibble, M.D., St. Louis.
Landon B. Edwards, M.D., Richmond, Va.
Wm. G. Eggleston, M.D., Chicago.
F. C. Fernald, M.D., Washington, D.C.
Henry M. Field, M.D., Boston, Mass.
H. C. Fielding, M.D., Toledo, O.
G. S. Franklin, M.D., Chillicothe, O.
J. N. Freeman, M.D., Brooklyn.
Geo. E. Frothingham, M.D., Ann Arbor, Mich.
A. Y. P. Garnett, M.D., Washington, D.C.
J. McF. Gaston, M.D., Atlanta, Ga.
H. Landis Getz, M.D., Marshalltown, Iowa.
Albert L. Gihon, M.D., United States Navy.
E. E. Glover, M.D., Terre Haute, Ind.
Moses Gunn, M.D., Chicago.
W. D. Haggard, M.D., Nashville, Tenn.
John B. Hamilton, M.D., Washington, D.C.
Frederick N. Huston, M.D., Rockland, Me.
T. J. Hutton, M.D., Fergus Falls, Minn.
E. Fletcher Ingals, M.D., Chicago.
Edward Jackson, M.D., Philadelphia.
S. K. Jackson, M.D., Norfolk, Va.
Joseph Jones, M.D., New Orleans.
J. E. Kelly, F.R.C.S.I., New York City.
D. N. Kinsman, M.D., Columbus, O.
C. H. von Klein, M.D., Dayton, Ohio.
Charles W. Kollock, M.D., Charleston, S. Ca.
M. Landesberg, M.D., New York City.
Charles A. Leale, M.D., New York City.
James Hendrie Lloyd, M.D., Philadelphia.
Donald MacLean, M.D., Detroit, Mich.
S. Marks, M.D., Milwaukee, Wis.
John S. Marshall, M.D., Chicago.
Franklin H. Martin, M.D., Chicago.
Wm. M. Mastin, M.D., Mobile, Ala.
J. B. Mattison, M.D., Brooklyn, N. Y.
E. S. McKee, M.D., Cincinnati.
George O. Meade, M.D., Newmarket, England.
J. W. Meek, M.D., Camden, Ark.
DeLaskie Miller, M.D., Chicago.
P. J. Murphy, M.D., Washington, D. C.
T. E. Murrell, M.D., Little Rock, Ark.
Daniel T. Nelson, M.D., Chicago.
Robert Newman, M.D., New York City.
John A. Ouchterlony, M.D., Louisville, Ky.
J. F. Y. Paine, M.D., Galveston.
W. Thornton Parker, M.D., Newport, R. I.
James H. Parkinson, L.R.C.S., Sacramento, Cal.
Theophilus Parvin, M.D., Philadelphia.
Asa F. Pattee, M.D., Boston, Mass.
F. H. Patton, M.D., National Military Home, Ohio.
P. Brynberg Porter, M.D., New York City.
C. R. Reed, M.D., Middleport, O.
R. Harvey Reed, M.D., Mansfield, O.
Henry J. Reynolds, M.D., Chicago.
Geo. H. Rohé, M.D., Baltimore, Md.
Charles Wesley Rook, M.D., Quincy, Ill.
Amos Sawyer, M.D., Hillsboro, Ill.
W. L. Schenck, M.D., Osage City, Kan.
John V. Shoemaker, M.D., Philadelphia.
O. T. Schultz, M.D., Mt. Vernon, Ind.
Eugene Smith, M.D., Detroit, Mich.
Henry H. Smith, M.D., Philadelphia.
D. A. K. Steele, M.D., Chicago.
H. von Sweringen, M.D., Ft. Wayne, Ind.
J. W. Thompson, M.D., St. Paul, Minn.
Mary Harris Thompson, M.D., Chicago.
Charles A. Todd, M.D., St. Louis.
S. S. Todd, M.D., Kansas City, Mo.
Joseph Toner, M.D., Washington, D. C.
J. M. Towler, M.D., Columbia, Tenn.
T. J. Tyner, M.D., San Antonio, Tex.
James Tyson, M.D., Philadelphia.
B. A. Watson, M.D., Jersey City, N. J.
Edward F. Wells, M.D., Chicago.
G. W. Wilber, M.D., Philadelphia.
Herbert F. Williams, M.D., New York City.
Grace Wolcott, M.D., Boston, Mass.
Philip Zenner, M.D., Cincinnati, O.
Gustav Zinke, M.D., Cincinnati.

876407

SOCIETIES.

American Dermatological Association.
American Gynæcological Society.
American Medical Association.
American Otological Society.
American Rhinological Association.
Association of American Physicians.
Chicago Gynæcological Society.
Chicago Medical Society.
Chicago Society of Ophthalmology and Otology.
Gynæcological Society of Boston.
Medical Society of the District of Columbia.
Medical Society of Virginia.
Mississippi Valley Medical Association.
Obstetrical Society of Philadelphia.
Pathological Society of Philadelphia.
Suffolk District Medical Society.

610.5
AM5
V.7
No.1-26
cop 2

INDEX VOLUME VII.

PAGE.

ABDOMEN, penetrating wounds.....593, 696
Abdominal section..... 624
Abortion, assafœtida in..... 573
ethics of.....505, 529
viburnum in..... 352
Abscess, hepatic..... 212
mammary, abortive treatment of..... 178
of mastoid cells..... 164
ovarian, with pyo-salpinx..... 419
pelvic, laparotomy for..... 188
Abscesses, iodol in..... 610
lumbar..... 449
Acne..... 365
treatment by sounds..... 304
Acorn cocoa, in diarrhœa..... 573
Actinomycosis.....384, 608
Adams County Medical Society..... 308
Addison's disease, tubercle bacilli in..... 180
Adenoma, of cervix..... 326
Agaracine, uses..... 630
Aged, pneumonia in..... 425
Air-passages, upper, catarrh of..... 495
Albumin, bearing on life insurance..... 129
nitric acid test..... 322
Albuminuria, experimental..... 154
Alcohol, effects of..... 691
Alcoholism, strychnia in..... 59
Alimentation, artificial..... 165
Allen, Van, asthma..... 495
Aloin, uses..... 630
Alopecia, prematura..... 527
Alt, trachoma..... 544
Althaus, cereoral syphilis..... 472
Aluminium bronze..... 39
American Gynæcological Society.....413, 436
officers..... 442
Dermatological Association..... 298
Medical Association..... 409
officers..... 523
plan of organization..... 706
sections.....381, 503
Otological Society..... 161
Pharmaceutical Association..... 476
Public Health Association..... 325
Rhinological Association..... 494
Ammonium, salicylate, in fevers..... 654
Amputation, at hip-joint..... 206
re-injection of blood after..... 179
Anacharis alsinastrum..... 266
Anæsthesia, local..... 578
for electrolysis..... 462
Anæsthetic, chloroform as.....348, 448
local, new..... 687
Anatomical bill, of Georgia..... 670
Anatomy act, needed in Maryland..... 688
Ancient Irish medical jurisprudence..... 717
Andrews, lumbar abscesses..... 449
Aneurism, wiring..... 481
Animals, experiments on, in England..... 166
Anteflexion, division of cervix in.....415
Antipyrin, action of..... 685
doses and use of..... 630
in headache..... 405
in rheumatism..... 630
in sunstroke..... 58
Antisepsis, intestinal..... 5
Antiseptic paper dressings..... 618
Antrum, tumor of..... 635
Anus, delivery through..... 176
fistula of, with phthisis..... 561
Aortic, valve disease..... 49
Arizona, hygienic deficiencies of..... 306
Arlt, von, Prof..... 308
Armstrong, urethrotomy and death from pyelitis..... 702
Army, Medical Department, changes in, 28, 84. 112, 140, 168, 196, 224, 252, 280, 308, 336, 364, 392, 420, 448, 476, 504, 532, 560, 588, 616, 644, 672, 700, 718
Army, U. S., Surgeon General of..... 634
Arsenic, bromide, in diabetes..... 352
Asclepia tuberosa, therapy of..... 123
Aseptic, surgical operation, technique..... 197
Assafœtida, in abortion..... 573

PAGE.

Association of American Physicians, 16, 25, 44, 110, 167
Asthma, cause and treatment..... 495
Atheroma, recurrent, of uterus..... 690
Atkinson, röthcln..... 299
Atropia, antagonism to morphia..... 658
Aural, naso-, catarrh..... 496

BACILLI, tubercle, in Addison's disease..... 180
Bacillus, of malaria..... 392
typhoid.....43, 50
Bacterio-therapy.....126, 460
Badal's operation..... 235
Baer, fibro-sarcoma of ovary..... 524
monocyst of ovary..... 525
bursting cyst of ovary..... 525
Baker, electrolysis..... 443
Bandl, Prof..... 392
Barker, maternal impressions..... 441
Barnett, salicylate of ammonium in fevers.. 654
Bartlett, dermoid cyst complicating labor... 130
modification of Porro operation..... 385
placenta prævia..... 130
Barton, tumor of stomach..... 76
vertical extension in fracture of femur.. 625
Batchelder, vaccination..... 513
Baths, in cholera infantum..... 58
Bauer, laparotomy..... 165
Beef, poisoned..... 613
Belfield, digital exploration of bladder..... 253
supra-pubic cystotomy..... 273
Bergh, on Pasteurization..... 82
Bermann, nasal polypus.....247, 277
Bert, Paul, death of..... 644
Biliary obstruction, relation to glycosuria... 208
Billings, urine tests..... 527
Bishop, alopecia prematura..... 527
operations on drum for deafness..... 232
Bismarek, on State medicine..... 195
Bismuth, salicylate..... 630
therapy..... 123
Bixby, Dr. S. N., obituary of..... 111
Blackburn, collapsed lung..... 666
enlarged spleen..... 666
Bladder, digital exploration of..... 253
diseases, galvano-cautery in..... 228
hypertrophy of..... 455
rupture of..... 490
sarcoma and papilloma of..... 108
tumors of..... 407
Blood, circulation of..... 287
coagulation of..... 179
in leukæmia..... 94
re-injection of after amputation..... 179
tumors of cranium.....309, 337, 368
vessels, fibrinous obstructions of..... 659
Blumer, Dr. G. Adler..... 718
Body, influence of mind on..... 24
Boldo-glucine, hypnotic properties..... 518
Bone, granules of, from a tumor..... 247
parietal, caries of..... 385
shortening of, for injury.....176, 504
Bones, tarsal, resection in club-foot..... 686
Brain, abseess of from otitis..... 557
embolism of..... 582
of Gambetta..... 196
surgery, points in..... 491
Bremer, essential vertigo..... 695
Bright's disease, discussion on..... 20
Britain, Great, General Medical Council... 688
British Medical Association.....251, 410
Brighton meeting..... 353
department of bacteriology..... 306
Bromidia..... 154
Bronson, erythanthema syphilitica..... 298
Bronze, aluminium..... 39
Brooklyn, medical inspection in..... 252
Brown, pharyngo-nasal hypertrophies..... 495
public health laws..... 662
puerperal eclampsia..... 533
puerperal scpticæmia..... 554
rôle of the ovary..... 690
turpentine in children's diseases..... 344

PAGE.

Bruen, diaphragmatic pleurisy..... 44
Buboes, subcutaneous treatment of..... 214
Buck, operations on mastoid..... 163
ulceration of membrana tympani..... 162
Buckham, importance of prophylaxis..... 680
Burnett, black cataract..... 584
inflammation of the attic tympani..... 164
Byford, pelvic hæmatoceles.....246, 333
retroversion of uterus.....147, 159
Byrne, galvano-cautery in procidentia..... 442

CABINET, pneumatic..... 211
Cæsarean operation..... 446
Sänger's..... 135
Caffeine, as a diuretic..... 378
in heart disease..... 658
Calculi, large..... 108
urethral..... 702
Caldwell, hernia of umbilical cord..... 104
Cambridge, bequest to..... 692
Campbell, Bartley..... 418
Canabinone, doses and use of..... 630
Caneer of kidneys..... 281
of lips..... 302
of mamma..... 277
of skin..... 302
Carbolic acid, abuse of..... 53
injections in carbuncle..... 59
Carbuncle, carbolic injections in..... 59
treatment of..... 366
Caries, exeision of seapula for..... 574
of parietal bone..... 385
Carpenter, insanity..... 225
Casselberry, galvano-cautery in nasal and pharyngeal disease..... 412
Castration, in nervous and mental disease.. 547
Cataract, after-treatment..... 636
black..... 584
extraction, cocaine in..... 203
Catskills, excursion to..... 82
Cerumen, black..... 390
Cervix, adenoma of..... 326
division of, in anteflexion..... 415
in dysmenorrhœa..... 415
laceration, treatment..... 416
splitting, fatal..... 50
Chadwick, blue color of vagina..... 445
Charities, abuse of.....605, 696
in New York..... 418
Charleston Physicians..... 336
Cheese, poisoned..... 613
Chevreul, M..... 53
centenary..... 240
Chicago, milk inspeetion in..... 436
water supply of..... 522
Children, diseases of..... 399
diseases, address in..... 1
diagnosis in..... 429
turpentine in..... 344
of the poor..... 361
taking temperature of..... 294
Chloral, in traumatic tetanus..... 236
Chloroform, as an anæsthetic.....348, 448
as an anthelmintic..... 658
Cholera, in Europe..... 211
infantum, baths in..... 58
in South America..... 616
mortality..... 157
reports on..... 586
Shakespeare's report..... 643
treatment of.....37, 58
Chorea, etiology of..... 165
syphilitic..... 236
Chromic acid, in hypertrophies..... 495
Chrysarobin, internally..... 366
Circumcision, under cocaine.....126, 431
Claiborne, school hygiene..... 551
Clavicle, excision of..... 574
Club-foot, resection of tarsal bones in..... 686
Cocaine..... 366
artificial..... 352
circumcision under.....126, 431
corneal lesions from..... 321

PAGE.

Cocaine, in cataract extraction 203
inhalations in pertussis 403, 642
poisoning 406
trephining under 38
Cocoa, acorn, in diarrhœa 574
Coffins, in church porch 686
Collapse from hæmorrhage, salt solution in, 350, 367 546
Colleges, Missouri Board and 140
Colocynthin dose and use 630
Colon, overfilling of 382
Columbus Medical College 578
Coma, diabetic 295
Committee for collective investigation 718
Communications, privileged 523
Condylomata, syphilitic 686
Congress, International Medical, 51, 73, 81, 191, 194, 195, 280, 364, 465, 550, 587, 644
British Medical Association and 224
Michigan Medical Society and 130
outlook for 168
of Psychiatry, and Mr. Bell 27
Conjunctiva, transplantation of 347
Conjunctivitis, granular 460
Conner, U. S. Pension Bureau 570
Constipation, in women 290, 305
Consultation, what is a 99, 616
Contractions, rythmical, from hæmorrhage, 75
Convallaramine, dose and use 630
Cookery, instruction in 682
Cord, umbilical, hernia of 104
Cornil's laboratory, courses in 107
Cornea, lesions of from cocaine 321
Corrosive sublimate as a dressing 178
injections in cystitis 405
poisoning 273
Corson, 3,000 cases of labor 138
Coryza, neurotic treatment of 59
Councilman, blood of malarial fever 46
Cranium, blood tumors of 309, 337, 368
Cremation 98
and Romanism 336
economy of 692
Crematory, Buffalo 588
Croup, fumigations in 221
intubation of larynx for 35
Curtis, absence of patella reflex 662
Cushing, recurrent atheroma of fundus 699
ovarian cyst 699
Cyst, dermoid, complicating labor 130
of broad ligament 219, 498
ovarian, diagnosticated as pregnancy .. 690
sac of 250
Cystitis, sublimate injections in 405
Cystotomy, supra-pubic 273

DAVENPORT, qualities of cows' milk 275
Davis, British Medical Association 410
Deafness, operations on drumhead for 232
Delafield, chronic gastritis 16
Dennis, technique of aseptic surgical operation 197
Denslow, carcinoma cutis 302
treatment of acne by sounds 304
Dental surgery, address 29
Dermatitis, exfoliative 303
Detroit board of health 718
Diabetic coma 295
Diabetes, bromide of arsenic in, ... 352
influence on pregnancy 221
relation to Bright's 20
Diaphragm, danger of wounding in empyema operations 685
pleurisy of 44
Diarrhœa, acorn cocoa in 574
sulphate of iron in 294
Dibble. new perimeter 572
Dickinson, pemphigus conjunctivæ 566
Diet, in gastritis 573
Digestion, process of 58
Digits, supernumerary 215
Diphtheria, intubation for 694
sulphur in 166
treatment of 3, 454
Dipsomania, strychnia in 12
Disease, from surface filth 692
collective investigation 456
how to introduce 196
Diseases, infectious, diagnosis of 181
Diuretic, caffeine as a 378
mercury as a 704
Drastics, effect of on intestines 71
Drill, effects of 356
Drink, poisons in 209
Dropsy, diagnostic value 40
Drumine, new local anæsthetic 687
Dunn, cortical hæmorrhage 75
Dysmenorrhœa, division of cervix for 415

PAGE.

EAR disease, iodol in 574
Ear, middle, inflammation of 161
purulent, operation for 161
unique injury to 601
Eclampsia, puerperal 533, 640
Education, industrial 418
of women 267
Electrolysis in gynecology 61, 85, 90, 443
local anæsthesia in 462
in lupus 602
report on 597
Embolism 92
of brain 582
Emmet, pelvic inflammations 436
operation, modification of 416
Empyema operations, dangers of wounding diaphragm in 685
pleurotomy for 619, 634
Endocarditis, experimental 46
ulcerative 264, 274
Endometritis, galvano-cautery in 500
Enterotomy, for ileus 572
Entropion, ligature for 585
Epicystotomy, for papilloma and sarcoma .. 108
Epidydimitis, treatment of 686
Epilepsy, ligature of vertebrals for 187
menstrual 326
Ergot after labor 439
in fibroid tumors 215, 242
in third stage of labor 351
Eruption, bullous, from iodine 300
Erysipelas, curative powers of 99
Erythanthema syphilitica 298
Etheridge, amputation of uterus 466
Ethics, Code of 711
Evidence, expert 494
Euonymin, dose and use 630
Eye, diseases, iodol in 610
foreign body ten years in 453
hot, associated with gout 96
evisceration of 582
symptoms of syphilis 546
Exophthalmos 485
Expert evidence 494
Experts, as witnesses 391
compensation for 324
Extension, vertical, in fracture of femur 625

FALLOPIAN tube, bursting of, in pregnancy, 133
Faradization, in extra-uterine pregnancy ... 136
Favus, of fowls and man 168
Feeding, of infants 463
Fernald, pleurotomy for empyema 619, 634
Femur, fracture of, late union 515
fractures of, Bryant's method 625
Ferris, hygiene of schools 691
Fever, malarial changes in blood in 113
treatment of 115
intermittent, of long standing 117
congestive malarial 118
hæmorrhagic malarial 118
Fevers, periodic, hygiene of 622
Fibrin ferment, origin of 94
Fibroids, electrolysis in 90
ergot for 215, 242
Fibrinous obstruction of vascular system ... 659
Fibroma, pharyngo-laryngeal 429
Fibro-myoma, expelled after labor 665
Field, constipation in women 290, 305
Fielding, potassium chloride 391
Filtration of water 637
Fire, sanitation by 617
Fistula, anal, associated with phthisis 561
nephro-intestinal, diagnosis 432
Fitz, inflammation of vermiform appendix 47
Fœtation, extra-uterine 583
Food, poisons in 209
Formad, intra-cranal hæmorrhage 73
pig-back kidney 51
Fox, lymphadenoma 299
Fracture, union of after two years 515
Fractures, compound, treatment of 575
Franklin, cremation 140
sanitation by fire 617
Freeman, electrolysis in fibroid tumor 90
Frothingham, cocaine in cataract extraction, 203
Fry, brain from meningitis 248
etiology of chorea 165
Funkhouser, vaginal hysterectomy 487

GALVANO-CAUTERY, in diseases of bladder. 228
genito-urinary affections 54
in metritis and endometritis 500
in nasal-surgery 412
in procidentia 442
Galvin, improved inhaler 276
Gambetta, brain of 196
Gamgee, Mr., death of 420
Garnett, cocaine in pertussis 403

PAGE.

Gaston, ileo-cæcal region 393
Gastritis 17
diet in 573
Genital disorders produced by congestion of the medulla 57
Georgia, anatomical bill 670
Germany, nostrums in 532
Gestation, influence of diabetes on 221
Getz, trocar and canula 363
Gill, collective investigation 456
Glanders, in man 195
Glaucoma, iridectomy for 430
laceration of infra-trochlear nerve for .. 235
Glomerulo-nephritis, experimental 49
Glottis, spasm of in rickets 44
Glover, treatment of anal fistula 561
Glycosuria, connection with biliary obstruction 208
salicylic treatment of 95
Goodman, ergot after labor 439
Gordon, naso-aural catarrh 496
Gout, relation to Bright's 20
Graham, scleroderma 302
Gray, ligation of vertebral arteries for epilepsy 187
Dr. J. P., death of 634
obituary of 671
Greenough, scabies 300
psoriasis 301
Gummata, precocious 300
Gunn, enucleation of neuroma 427
Gunshot wound of spine, healed 628

HÆMORRHAGE, control of, in excision of tongue 378
contractions, rhythmical, from 75
intra-cranial 73
cortical 75
malarial 579
peritoneal injections in 352
post-partum electricity in 582
saline solutions in 367
trephining for 352
uterine, hydrastis in 322
Hæmatocele, pelvic 246, 333, 577
Hæmoter, of von Fleischl 528
Haggard, diseases of children 1
Hair, and teeth of the future 434
restoration of color of 417
Hamill, Dr. R. C., death of 130, 214
Hamilton, depressed fracture of skull 584
granules of bone from a tumor 247
inguinal hernia 256, 271
tumor of antrum 635
Dr. Frank H., death of 210
Hands, anomaly of 76
Hardaway, exfoliative dermatitis 303
Hardy, retirement of 669
Hare-lip, operation for 32
Hay fever 496, 497
Headache, antipyrin in 405
relation to bad vision 447
Health insurance 477
laws 692
Hearing, physiology of 164
Heart disease, caffeine in 658
sparteine in 500
fibrinous obstructions of 659
movements of 557
right, hepatic pressure and 97
Helm, subcutaneous treatment of buboes ... 214
Hemianopsia 50
Hepatic pressure, in diagnosis 97
Hernia, inguinal, radical cure 256, 271
strangulated, complications 565
of umbilical cord 104
Hip, amputation at 206
disease, amputation for 206
excision, in tuberculosis 629
Hoadley, stricture of rectum 606
Homans, Dr. C. D., death of 336
Hornibrook, pyonephrosis 454
Hospitals, charity, in New York 418
Hotz, after-treatment of cataract 636
House plants as sanitary agents 631
Howard, uroglaucin 277
Hunt, Dr. Owen T., death of 700
puerperal insanity 304
Hunter, pain after laparotomy 443
Huston, circulation of blood 287
Hutchinson, health insurance 477
Hutton, chloroform as an anæsthetic 348
Hydatids, of abdomen, laparotomy 158
of liver, operation 12
Hyde, iodine eruption 300
Hydrastis, in uterine hemorrhage 322
Hydrocephalus, exposure to sun in 462
Hydrogen, peroxide, in inflammation of attic tympani 164

PAGE.

Hydrogen, injections, fatal ... 518
Hydrophobia commission ... 24
experiments ... 56
Hygiene, school ... 551
Hyprotic, boldo-glucine ... 518
Hypnotics ... 545
Hypodermic solutions, sterilized ... 718
Hysterectomy, vaginal ... 445, 487
Hysterical somnolence ... 464
Hystero-mania, treatment of ... 406
Hysterorrhaphy ... 666

Ice Cream, poisoned ... 613
Ichthyol, in rheumatism ... 602
in skin diseases ... 301, 664
Icterus, emotional ... 297
Ileo-cæcal region, surgical relations ... 393
Ileus, enterotomy for ... 572
Iliac veins, valvular action of ... 600
Infant feeding ... 463
Infants, narceine for ... 432
Infection, purulent, after pneumonia ... 307
Infectious diseases, diagnosis of ... 181
inter-State notification of ... 558
Ingals, intubation of larynx ... 35
pharyngo-laryngeal fibroma ... 429
Inglis, effects of alcohol ... 691
Inhaler, improved ... 276
Semple's atomizing ... 276
Injections, vaginal ... 538
Inoculation, for zymotic diseases ... 166
yellow fever ... 27, 112
Insane, amusement for ... 418
Insanity, causes and prevention of ... 225
puerperal ... 304
Insufflation, nasal, in pertussis ... 432
Insurance, bearing of albumin and sugar on, 129
health ... 477
Intestinal antisepsis ... 5
nephro-, fistula, diagnosis ... 432
obstructions, operations for ... 557
Intestine, sloughing of ... 582
Intestines, effect of drastics on ... 71
gun-shot wounds of ... 611
movements of ... 557
wounds of, laparotomy for ... 361
Intubation of larynx ... 76, 180, 360, 556, 694
Intussusception ... 108
Iodine, bullous eruption from ... 300
Iodol, in ear disease ... 574
uses of ... 610
Iridectomy, for glaucoma ... 430
Irish jurisprudence, ancient ... 717
Iron, sulphate of, in diarrhœa ... 294
tincture, administration of ... 630

Jackson, otomy nomenclature ... 474
shadow test in refraction ... 262
Jaggard, gravid uterus of sixth month ... 241
ovum of fourteenth week ... 385
Japan, medical papers in ... 252
Jaundice, enemata in ... 13
Jerard, necrosis of nasal bones ... 495
Jewell, overfilling of colon ... 382
Johnson, cyst of broad ligament ... 219
hæmoter of von Fleischl ... 528
mass from cervix uteri ... 326
menstrual epilepsy ... 326
Johnston, peritonitis in typhoid ... 278
Dr. W. E., obituary of ... 111
Jones, diseases in Charity Hospital, New Orleans ... 141
statistics from hospital service ... 113
Jurisprudence, ancient Irish ... 717

Keller, Dr. J. I., death of ... 475
Kelly, asepsis and antisepsis ... 102
ethics of abortion ... 505, 529
hysterorrhaphy ... 666
ovarian pregnancy ... 665
sarcoma of abdominal wall ... 665
Kentucky State Society, officers ... 84
Keratosis follicularis ... 302
Kidney diseases, work on ... 15
pig-back ... 51
Kidneys, cancer of ... 281
King, conservative element in disease ... 184
Kinloch, penetrating wounds of abdomen ... 696
Kinsman, intestinal antisepsis ... 5
Klein, von, rhinology, address in ... 673
Knapp, sclerosing mastoiditis, fatal ... 163
Knee, phenomenon, value ... 32
Kollock, paralysis of motor oculi ... 320
Krackowizer prize ... 557

Labium, cystic tumor of ... 557
Labor, complicated by dermoid cyst ... 130
delivery per anum ... 176
ergot after ... 439
in ... 350
fibro-myoma expelled after ... 665
impeded by occlusion of os ... 218, 332
3,036 cases ... 138
Lamb, embolism of brain ... 582
general tuberculosis ... 668
larynx of general tuberculosis ... 279
pyo-salpinx ... 279
Landesberg, iridectomy for glaucoma ... 430
Landis, Dr., death of ... 634
Lanolin ... 124
in skin diseases ... 301
Lantanin ... 574, 658
Laparotomy, as a diagnostic resource ... 603
for extra-uterine pregnancy ... 133
for hydatids of abdomen ... 158
for pelvic abscess ... 188
for suppurative peritonitis ... 438
for symptoms of ileus ... 165
for wound of intestines ... 361
in strangulated hernia ... 41
pain after ... 443
Laryngeal, recurrent, function of ... 69
Larynx, cast of ... 271
intubation of ... 35, 76, 180, 360, 556, 694
lumbricoids in ... 308
of tuberculosis ... 279
Laws, public health ... 692
Lead poisoning, albumin in ... 58
Lens, ectopia of ... 584
Leprosy, cure of ... 366
Leukæmia, blood in ... 94
Lewis, sloughing of intestine ... 582
tendon-jerk and muscle-jerk ... 18
Lichen and icterus ... 297
Liebermann, Dr., death of ... 222
Life, is worth saving ... 323
Ligament, broad, cyst of ... 219
Lithium, salicylate of ... 406
Lithotomy ... 184
Little, physiology of hearing ... 164
Live burial, precautions against ... 361
Liver, abscess of, diagnosis and treatment, 212
hydatids, operation ... 12
Lloyd, electrolysis ... 597
Logan, catarrhal inflammation, mixed form, 495
Longaker, fibro-myoma expelled after labor 665
Love, artificial alimentation ... 165
Lumbar abscesses ... 449
Lumbricoids, in larynx ... 308
Lung, phthisical, iodine injected ... 694
Lupus, electrolysis in ... 602
erythematosus ... 165
Lyman, tetany ... 46
Lymphadenoma ... 299
Lyon, cancer of mamma ... 247

MacLean, amputation at hip-joint ... 206
Malaria, antagonism to science ... 354
bacillus of ... 392
Malarial fever, blood in ... 46
changes in blood in ... 113
hæmaturia ... 118
hæmorrhagic ... 118
hæmorrhage ... 557
pernicious ... 118
treatment of ... 115
Mamma, cancer of ... 247
Mammæ, chapped, solution for ... 307
Mania, hystero-, treatment of ... 406
suicidal, in typhoid ... 633
Manson, malarial hæmorrhage ... 579
Marcy, wool for surgical use ... 531
Marine Hospital Service, changes in, 28, 84, 112, 168, 196, 252, 308, 304, 420, 448, 476, 504, 588, 672
Marks, union of fracture after two years ... 519
Marshall, address on oral surgery ... 29
tooth discharged through nasal passages ... 516
Martin, electrolysis in gynecology ... 61, 585
Maryland, anatomy act needed in ... 688
Mastin, venous tumors of cranium, 309, 337, 368
Mastitis, turpentine in ... 683, 689
Mastoid cells, abscess of ... 164
operations on ... 163
Mastoiditis, sclerosing ... 163
Maternal impressions ... 441
Mathews, hay fever ... 496
Mattison, opium antidotes ... 568
McArthur, hepatic abscess ... 212
McBride, Dr., death of ... 336
McKee, early diagnosis of pregnancy ... 510
Medical Council of Great Britain ... 688
inspection in Brooklyn ... 252
organization, proposed new ... 167
Medical organization, exclusiveism in ... 14
Medication, gaseous ... 490
Medicine, address in ... 57
in 1936 ... 127
Medicines, officinal, prescribing of ... 493
Medulla, congestion of, causing genital disorders ... 57
Meek, Dr. J. T., obituary of ... 697
occlusion of vagina ... 349
Membrana flaccida, perforation of ... 164
tympani operations on for impaired hearing ... 232
ulceration of ... 162
Meningitis, brain from ... 248
Menstruation, explanation of ... 93
Mental, disease, and visceral lesion ... 39
castration in ... 547
strain, effect on teeth ... 12
Menthol, action of ... 602
Mercury, diuretic action of ... 704
injections in syphilis ... 461
Methyl chloride, in neuralgia ... 601
Metritis, galvano-cautery in ... 500
Milk, adulterated, in Chicago ... 224
albuminates in ... 180
boiled and unboiled ... 266
mother's, substitute for ... 487
physical and chemical qualities ... 275
poisoning ... 224
Miller, treatment of diphtheria ... 3
Mimicry, nervous ... 581
Mind, influence on body ... 24
Miner, Dr., death of ... 587
Mississippi Valley Medical Association ... 165
Mitchell, tendon-jerk and muscle-jerk ... 18
Moles ... 303
Montgomery, intubation of larynx ... 360
ligature for entropion ... 584
Moore, Dr. E. M., resignation of ... 361
Morgan, nasal polypi ... 325
Morphine, antagonism to atropia ... 658
taking, detection of ... 420
Morrow, keratosis follicularis ... 302
Mosquitos, transmission of yellow fever by, 433
Motor occuli, paralysis of ... 320
Mouth, sponge-grafting in ... 31
Murphy, extra-uterine fœtation ... 583
turpentine in mastitis ... 683, 689
Murray, Surgeon-General ... 72
Murrell, black cerumen ... 390
foreign body ten years in eye ... 453
Muscle jerk ... 18
Music, influence on system ... 643

Naphthaline, in renal affections ... 504
Narceine, for infants ... 432
Nasal bones, necrosis of ... 495
hypertrophies, chromic acid in ... 495
surgery, cautery in ... 412
Naso-aural catarrh ... 496
Navy Medical Department, changes in, 28, 112, 168, 196, 224, 252, 280, 308, 336, 364, 420, 448, 476, 532, 560, 616, 644, 672, 700
Nebraska Medical Society, officers ... 224
Nelson, diseases of women ... 589
supernumerary digits ... 215
Nephritis, scarlatinal ... 237
Nerve, infra-trochlear, Badal's operation on 235
injury, trophoneurosis from ... 301
recurrent, function of ... 69
Nervous disease, castration for ... 547
Neuralgia, cure for ... 630
methyl chloride in ... 601
quinine in ... 179
Neuritis, segmental ... 177
Neuroma, enuclcation of ... 427
New Jersey, Board of Health ... 361
Newman, galvano-cautery ... 228
New York State Medical Association ... 611
Fifth District Branch ... 699
Nitric acid, in albumin tests ... 322
Nitrite of amyl in opium poisoning ... 718
Nitro-glycerin, dose and use ... 630
in heart disease ... 630
Nomenclature, abdominal surgical ... 474

Obstetrical principles, our ... 155
Ochsner, actinomycosis ... 608
O'Hara, extra-uterine pregnancy ... 133
fibro-cystic tumor of uterus ... 137
Ohio State Society, officers ... 84
Ohman-Dumesnil, lupus erythematosus ... 165
Oil, cod liver, phosphorized, for restoration of color of hair ... 417
Operations, toxic urine and ... 369
Opium antidotes ... 568
poisoning, nitrite of amyl in ... 718
Optical illusion ... 307

PAGE.

Orchitis, treatment of..... 686
Orbit, sarcoma of edge of..... 250
Osler, bicuspid condition of semi-lunar valves..... 49
Osmic acid, uses..... 630
Otitis, suppurative, causing abscess of brain, 557
Ouchterlony, renal cancer..... 281
Ovarian cyst, diagnosticated as pregnancy 690
multilocular..... 158
sac of..... 250
Ovaries, removal for fibroid..... 360
Ovariotomy, unusual case..... 624
Ovary, bursting cyst of..... 525
fibro-sarcoma of..... 524
monocyst of..... 525
rôle of..... 690
Ovum, of fourteenth week..... 385
Ozone, generation by terebene..... 95

PACKARD, anomaly of hands..... 76
Paine, delivery per anum..... 176
Palate, cleft, operation for..... 32
Pancreatic juice..... 53
Paper dressings, antiseptic..... 518
Papilloma, of bladder, removal of..... 108
Paralysis, of motor oculi..... 329
Paraplegia, cautery in..... 472
in Pott's disease..... 692
Parasitic mesology, in man..... 500
Park, caries of parietal bone..... 385
Parker, potassium chloride..... 250
toxic, urine and surgical operations 475
Parkes, ergot in fibroid tumors 215, 242
laparotomy for hydatids of abdomen... 158
ovarian cyst..... 158
urinary fistula..... 158
Parish, Cæsarean section..... 446
Parkinson, abuse of medical charities..... 696
chloroform as an anæsthetic..... 448
Parvin, puerperal septicæmia..... 587
Pasteur's anti-rabic inoculations..... 239
Pasteur and Frisch..... 657
Institute..... 420
method..... 669
Pasteurization, Bergh on..... 82
Patellar reflex, absence of..... 661
Pattee, potassium chloride..... 91
Pelvic hæmatocele..... 577
inflammations..... 436
Pemphigus conjunctivæ..... 566
Pension Bureau, U. S..... 570
Perimeter, new..... 572
Peritoneal, intra, injections in hæmorrhage, 352
Peritonitis, in typhoid..... 279
purulent, laparotomy for..... 438
Pharyngo-nasal hypertrophy, chromic acid in..... 495
Phosphorized oil, restoring color of hair by, 417
Phosphorus poisoning, turpentine in..... 500
Photography, medical..... 100
Phthisis, in New Orleans..... 141
treatment of..... 143
Physicians, ratio to population..... 633
Picrotoxin, dose and use..... 630
Piersol, medical photography..... 100
Placenta, expanded over ovum..... 130
prævia.....293, 627
Plants, as sanitary agents..... 631
Pleurisy, diaphramatic..... 44
Pleurotomy, for empyema.....619, 634
Plumbing, deadly sanitary..... 381
Pneumatic cabinet.....211, 435
Pneumatic differentiation..... 169
Pneumonia, in pregnancy..... 677
in the old..... 425
purulent infection after..... 307
statistics of..... 24
typhoid, quinine in..... 119
Poison case, new..... 403
Poisons, in food and drink..... 209
Polk, peri-uterine inflammation..... 48
Polypi, nasal.....247, 277, 325
nasal, complicating antral tumor..... 635
Pomeroy, abscess of mastoid cells..... 164
Porcher, typhoid fever..... 19
Porro operation, modification of..... 385
Porter, treatment of diphtheria..... 454
Ports, inspection of..... 586
Potassium, chloride.....91, 250, 391, 531
Pott's disease, cautery in paraplegia from, 472
paraplegia in..... 692
Pregnancy, blue vagina, sign of..... 445
early diagnosis of..... 510
extra-uterine.....133, 667
influence of diabetes on..... 121
pneumonia in..... 677
twin, ovum of..... 385
Prescriptions, percentages on..... 616

PAGE.

Preston, electricity in post partum hæmorrhage..... 582
removal of ovaries for fibroid..... 360
Price, pyo-salpinx, from gonorrhœa..... 665
with ovarian abscess..... 498
Procidentia, galvano-cautery in..... 442
Prophylaxis, importance of..... 680
Prostate, diseases, galvano-cautery in..... 228
Prudden, experimental endocarditis..... 46
Psoriasis..... 301
Puerperal eclampsia.....538, 640
fever.....538, 552, 554, 587
Puerperal, insanity..... 304
mastitis, turpentine in.....683, 689
Purdy, naphthaline in renal affections..... 504
sepsis, treatment..... 703
work on renal diseases..... 15
Purgatives, new..... 405
Pustule, malignant, quinine and turpentine in..... 602
Pyelitis, death from..... 702
Pyonephrosis, double..... 455
Pyosalpinx..... 279
from gonorrhœa,..... 665
with abscess of ovary..... 498

QUININE, artificial..... 298
in malignant pustule..... 602
in traumatic neuralgia..... 179
in typhoid pneumonia..... 119

RABIES, inoculations for..... 220
Pasteur's inoculations for..... 239
Radius, dislocation, with fracture of ulna.. 489
Ransohoff, wiring aortic aneurism..... 481
Reamy, address..... 440
Rectum, medication per..... 490
stricture, treatment of..... 606
Reed, abdominal section..... 624
complications of strangulated hernia.... 565
poisoned beef, etc..... 613
Reeve, peritonitis, suppurative, laparotomy for..... 438
Reflex, patellar, absence of..... 652
Refraction, shadow test for..... 262
Remedies, newspaper, and the public..... 157
remote effects of..... 269
Renal diseases, work on..... 15
Reporting cases, care in..... 634
Resorcin..... 207
in skin disease..... 301
Retina, photographing..... 12

REVIEWS:
Anders, House Plants as Sanitary Agents. 631
Creighton, Unconscious Memory in Disease..... 558
Donaldson, Two Comedies..... 642
Draper, Medical Physics..... 83
Galabin, Midwifery..... 697
Heath, Dictionary of Surgery..... 251
Medical and Surgical Directory..... 223
Morris, How we Treat Wounds To-Day... 698
Morris, Surgical Diseases of the Kidneys.. 699
Ollier, Traité des Résections..... 531
Owen, Surgical Diseases of Children..... 699
Pepper, System of Medicine.....26, 558
Pick, Fractures and Dislocations..... 251
Pomeroy, Diseases of Ear..... 672
Purdy, Bright's Disease..... 15
Rothacker, Henke's Atlas of Surgical Anatomy..... 672
Stewart, Compend of Pharmacy..... 27
Teale, Economy of Coal in House Fires.... 699
Texas, State Medical Society Transactions, 642
Treves, Manual of Surgery..... 26
Waring, Practical Therapeutics..... 251
Zeissl, Syphilis and Venereal Diseases.... 698

Reynolds, address in dermatology..... 365
vitiligo..... 701
Rheumatism, acute, treatment..... 40
antipyrin in..... 630
ichthyol in..... 602
relation to Bright's..... 20
Rhinitis, pruritic..... 497
Rhinology, past and future..... 673
Rickets, spasm of glottis in..... 44
Ringworm..... 366
Robinson, cancer of lip..... 302
Rohé, instruction in cookery..... 682
Rook, saline solutions in hæmorrhage..... 367
Ross, shortening of bones..... 504
Rötheln..... 299
Rumbold, pruritic rhinitis..... 497
Rush, Benjamin Dr., monument to..... 662
Rust, zymotic diseases..... 580

SALICYLIC treatment of glycosuria..... 95

PAGE.

Salivary calculus..... 582
Salol.....180, 462
Salt solutions, venous injections of.350, 367, 546
Sänger's Cæsarean operations..... 135
Sanitary Convention at Big Rapids..... 691
inspectors..... 700
Sanitation by fire..... 617
Sappey, retirement of..... 669
Sarcoma, fibro-, of ovary..... 524
fibro-, tumors..... 421
of abdominal wall..... 665
of bladder..... 108
of edge of orbit..... 250
Sargent, effect of military drill..... 356
Sawyer, bismuth and asclepia..... 123
Scabies..... 300
Scalp, horny tumor of..... 307
ringworm of..... 366
tumor of..... 53
Scapula, extirpation of..... 574
Scarlatina, at Marylebone..... 417
Scarlatinal nephritis..... 236
Schenck, hygiene of fevers..... 622
Schirmir, actinomycosis..... 384
Schools, hygiene of..... 691
irregular..... 391
Schultz, quinine in typhoid pneumonia..... 119
Scleroderma..... 302
Scrofula, relation to tuberculosis..... 610
Scrotal tumors, diagnosis of..... 173
Sea, doctor's life at..... 306
Secretaries, duties of..... 549
Sedgwick, filtration of potable waters..... 637
Seguin, hemianopsia..... 50
Septic fever, ammonium salicylate in..... 654
Septicæmia, puerperal....538, 552, 554, 587, 703
Sexton, ear, middle, inflammation of..... 161
purulent operation for..... 161
Shadow test in refraction..... 262
Sherwell, moles..... 303
Shoemaker, address in medicine..... 57
Sinclair, relation of defective vision to headache..... 447
Skin, cancer of..... 302
diseases, ichthyol in..... 664
tuberculosis of..... 304
Skull, fracture of, depressed..... 584
Smallpox and vaccination in New York..... 392
imported..... 196
Smith, penetrating wounds of abdomen.... 593
Semple's inhaler..... 276
transplantatiom of conjunctiva..... 347
SOCIETIES—
American Dermatological..... 298
Gynecological.....413, 436, 442
Medical Association..481, 409, 503. 523
Ophthalmological.....
Otological..... 161
Rhinological..... 494
Association of American Physicians, 16. 25, 44
Boston Gynecological.....304, 529, 690
Chicago Gynecological 130, 188, 215, 241, 332, 385, 466, 616
Medical, 76, 104, 158, 186, 212, 271, 382, 410, 446, 527, 606, 662
Ophthalmological.....584, 636
District of Columbia, 184, 219, 247, 277, 335, 582, 634, 666, 689
New York State Association..... 640
Philadelphia Obstetrical, 102, 153, 360, 498, 524, 665
Pathological.....73, 100
Suffolk District.....273, 356, 637
Solanine, analgesic action of..... 686
Somnolence, and trance..... 464
Sounds, in treatment of acne..... 304
Sparteine, in cardiac affections..... 500
Sperry, substitute for milk..... 486
Spina bifida, treatment..... 460
Spine, healed shot wound of..... 628
Spleen, extirpation of..... 11
tumor of, relation to uterine functions .. 266
Sponge-grafting, in mouth..... 31
Starkey, ectopia lentis..... 584
State medicine..... 195
Statistics, vital..... 705
Steele, scrotal tumors.....173, 186
Stelwagon, resorcin, ichthyol and lanolin... 301
Sterility, causes of..... 53
division of cervix for..... 415
Sterilized hypodermic solutions..... 718
Sternberg, bacillus of typhoid fever..... 50
Stomach, catarrh of, diet..... 573
tumor of..... 76
Strabismus, collyrium for..... 610
Strausser, Dr. S., death of..... 84
Strychnia, in dipsomania..... 12
Sublimate injections in cystitis..... 405
poisoning..... 273

PAGE.

Succi's fast 476
Sugar, as a dressing 178
in urine, bearing on life insurance 129
Sulphur, in diphtheria 166
Sun, cure of hydrocephalus 462
Sunstroke, antipyrin in 58
Surgical operation, technique of 197
Sutton, hysterectomy 445
modification of Emmet-operation 416
Sutton, Dr. George, memorial to 223
obituary of 56
Sweringen, placenta prævia 627
Syphilide, pigmentary 366
Syphilis, cerebral 472
intra-muscular injections in 461
late ocular symptoms 546
pulmonary 59
Syphilitic chorea 236
condylomata 686
erythanthema 298

TAIT, abdominal section for pelvic abscess, 188
faradization 136
Tannin solution, for ingrowing toe-nails ... 692
Tar, fumigations with in croup 221
Taylor, evisceration of eye 582
nervous mimicry 581
precocious gummata 300
Teeth, effect of mental strain on 12
transplantation of 29
Temperature, taking, in children 294
Tendon-jerk 18
Terebene, generator of ozone 95
Testicle, senile 98
Tetanus, puerperal 322
urethan and chloral in 236
Tetany 46
Thallin, dose and use 630
Theatres, hygiene of 286
Thompson, diseases of children 399
embolism 92
exophthalmus 485
lithotomy 184
sac of ovarian cyst 250
Tilden, trophoneurosis for nerve injury 301
tuberculosis of skin 304
To distinguish oleomargarine from butter .. 718
Todd, treatment of cholera 37
valvular action of iliac veins 600
Toe-nail, ingrowing, tannin for 692
Tongue, control of hæmorrhage during excision of 378
extirpation of 40
Towler, curability of phthisis 362
Trachea, cast of 271
Trachoma 544
Trance, hysterical 464
Trephining, in hæmorrhage 352
under cocaine 38
Trichinosis, treatment of 68
Trocar, and canula, combined 363
Tuberculosis, excision of hip in 629
general 668
mycosic nature of 139
of larynx and trachea 279
of urinary organs 179
pulmonary, discussion on 640
relation to scrofula 610

PAGE.

Tubes, distension of diagnosis 11
Tumor, containing granules of bone 247
fibroid, complicating pregnancy 466
removal of uterus for 471
horny of scalp 307
Tumors, malignant, treatment of 517
of bladder 407
Turpentine, fumigations with in croup 221
in children's diseases 344
in malignant pustule 602
in phosphorus poisoning 500
in puerperal mastitis 683
Tympani, attic, inflammation of 164
Tyner, inhalations of cocaine in pertussis ... 642
Type-writers 72
Typhoid bacillus 43, 50
Typhoid fever 19
ammonium salicylate in 654
from a single dose 700
peritonitis in 279
suicidal mania in 631
treatment 518
Tyrotoxicon, in ice-cream 195
Tyson, Association of American Physicians, 167

ULNA, fracture of, with dislocation of radial head 489
Umbilical cord, hernia of 104
University of Michigan 718
Ureters, dilatation of 455
Urethan, in traumatic tetanus 236
Urethra, diseases, galvano-cautery in 228
stricture of 702
Urethral calculi 702
Urethotomy, median 455
Urinary fistula, of twelve years 158
tuberculosis 179
Urine test, new 527
toxic, and operations 379, 475
toxicity of 139
Urethrotomy, death from pyelitis after 702
Uroglaucin 277
Urticaria, treatment of 366
Uterine appendages, disease of 96
appendages, removal of (discussion) 326, 327
fibroids, ergot in 215, 242
functions, relation to splenic tumor 266
hæmorrhage 322
intra-, medication 519
peri-, inflammation 48
Uterus, amputation 466
at sixth month 241
cancer of, hysterectomy for 487
dilatation of, new method 657
fibro-cystic tumor of 137
fibro-myoma, diagnosis of 11
removal of for fibroid 471
os, occlusion of 218, 332
retroversion of 147

VACCINATION 513
in Leicester 306
Vagina, blue, sign of pregnancy 445
occlusion of 349
ostium, absence of 176

PAGE.

Valves, aortic, disease of 49
semi-lunar, bicuspid 49
Veins, iliac, valvular action 700
Vermiform, appendix, inflammation of 47
Vertebral, arteries, ligation for epilepsy 187
Vertigo, essential 645
Vessels, fibrinous obstruction of 659
Viburnum, in abortion 352
Vienna Medical Faculty 308
Virginia Medical Society 550, 578
officers of 578
Visceral lesion, and mental disorder 39
Vision, defective, relation to headache 447
Vitiligo 701
Vivisection, in England 166
Volta Prize 364
Vomiting, acorn cocoa in 574

WAKLY, Dr., death of 356
Wales, surface filth 695
Walker, salivary calculus 582
Washington Obstetrical Society 476
water supply, filtering 219
Water, enemata of in jaundice 13
hot, in obstetrics and gynecology 684
potable filtration of 637
supply, of Chicago 522
Watson, fibro-sarcomata 421
Dr., prosecution of 42
Sections of the Association 503
Waxham, cast of trachea and larynx 271
intubation of larynx 76
occlusion of os uteri 218, 332
Webster, new poison case 403
Weight, how to increase 490
Welch, glomerulo-nephritis 49
Wells, pneumonia in pregnancy 677
Whittaker, spasm of glottis in rickets 44
Whooping cough, cocaine in 403
cocaine inhalations 642
nasal insufflation in 432
Wilber, potassium chloride 531
Williams, pneumatic differentation 169
Prof. E 476
Winn, intubation of larynx 556
Wilson, division of cervix backwards 415
laceration of cervix 416
statue of 24
Wolcott, ulcerative endocarditis 264, 274
Women, constipation in 290, 305
diseases of 589
higher education of 267
Wool, for surgical use 531
Wounds, penetrating, of abdomen 593, 696
shot, of intestines 611
Writers, medical and type-writers 72

YELLOW FEVER, inoculation for 27, 112
transmission by mosquitoes 433

ZEISSLER, ichthyol in skin diseases 664
Zenner, value of knee phenomenon 32
Zinke, puerperal fever 538
Zymotic diseases, inoculation for 166

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, JULY 3, 1886. No. 1.

ADDRESS

IN DISEASES OF CHILDREN.

Delivered at the Thirty-Seventh Annual Meeting of the American Medical Association, in St. Louis, May 7, 1886.

BY W. D. HAGGARD, M.D.,

OF TENNESSEE.

CHAIRMAN OF THE SECTION OF DISEASES OF CHILDREN.

MR. PRESIDENT AND GENTLEMEN:—In obedience to a time-honored custom, and in accordance with a by-law of this Association, I appear before you as Chairman of the Section on Diseases of Children, to note the advances and discoveries of the past year, which, like those in all other branches of scientific investigation, move slowly but steadily forwards; each investigator adding his mite to what was known before. We are here to-day, in this growing and prosperous city, from the North, East, South and West, as guardians of the health and lives of the people. We are assembled together for the purpose of uniting in an honest, earnest endeavor to utilize the knowledge which the advances of the recent past have shed upon the problem of life. We live in an age of progress, characterized by the most effective effort that has ever been put forth to place a proper estimate upon the value of life, to increase its duration, and to elevate humanity to the highest standard of physical, mental and moral grandeur.

The Section on Diseases of Children embraces the largest and most important field connected with the workings of the Association, and should enlist the most earnest attention of every member of the profession. I trust, therefore, that it will not be in vain that I bespeak your indulgence while I enter a plea for the fuller recognition of this branch of our work, and beg your coöperation in the endeavor to secure a safer passage across the tempestuous sea from infancy to childhood, and from childhood to adolescence.

The last year has not been fruitful in advances sufficiently tangible to admit of specification, and yet, perhaps no single year from the foundation of medicine to the present has been so rich in fruitage; so far-reaching in its influence upon both the profession and the laity. No year's work has so indelibly impressed the mind of the profession on the importance of results accomplished—not in this nor that particular branch of medical science, but upon the better and more definite understanding of the great principles underlying the whole superstructure of scientific medicine.

I shall endeavor to bring prominently before the mind of the profession the vast importance of this department, not only to that portion of the human family to be directly benefited by future advances and discoveries, but likewise to point out and emphasize the fact that in the great mortality of children society, the State, the Nation; yea, the world, are all much more largely interested in lessening this fearful mortality, than those who perish in infancy, for they are perhaps the gainers. I need not stop to discuss the fact that the diseases of children have been most sadly, if, indeed, not most culpably neglected, from the earliest records of medicine to the present time, for this is patent to every open-eyed physician. There is not a single branch of medicine; nor, indeed, of any of the collateral sciences, which has not, from time to time, been made the subject of more special thought, scientific research, observation and experiment, than have the diseases of children.

It is true that every advance or discovery in scientific medicine has reflected progress on pediatrics, which has been indirectly benefited by the outcome of these improvements. The pages of history are full of instruction in the matter before us. Take, for example, the operation of ovariotomy, which has added in the aggregate so vastly to the span of human existence. Take the last twenty years of its history, so full of incident and interest, and link it with the lives of those most prominently identified with it, and it seems as if destiny herself, in her onward sweep has borne them through evolutions of thought, of science, of human effort and achievement, with a restless and unpausing zeal that has constantly led them forward, from one brilliant success to another, until the advance of abdominal surgery, like the sun at noonday, casts its effulgence from pole to pole and from centre to circumference. The outcome of this important operation has so captivated the minds of the more enterprising and ambitious aspirants for fame and fortune, that pediatrics has, for the time being, been thrown completely in the background.

Our profession, crowned with the marvelous achievements of the past, now looks, with a wistful eye, for investigators worthy of the past and prophetic of the future, as laborers in the field of pediatrics—men who possess the largest combination of successful elements, who are ordained by nature to lead into unexplored regions and dominate new fields of thought which will enable them to solve the problem now pressing for solution, viz.: to lessen this fearful mortality of infantile life. The cradle and the couch can

learn nothing of themselves; therefore we, who have copiously gathered from the experience of the past, must contribute to the advance of the future. When we consider that from one-fourth to one-third of the human family die under five years of age, the victims of disease, it seems truly that their lives are but as the sands upon the shore; their voices are but the evening zephyr, that dallies with the leaf for a moment, and passes away forever.

"'Tis the wink of an eye, the draught of a breath,
From the blossom of health to the paleness of death."

It may be that it was the original purpose of the divine Creator to remove from earth to heaven this large proportion of the human family before they reach the age of responsibility. It may be there is a divine graciousness, an appropriateness, a grandeur, in the circumstance of the death of so many of our race during childhood. However this may be, we who have chosen for our lifework the amelioration of human suffering, cannot accept this dogma, for it neither satisfies the longings of nature nor the demands of the world. We must dive deeper into the mysteries of scientific medicine and prepare to grapple with that dread destroyer that claims so many of earth's little ones. Children typify the kingdom of heaven. They are the embodiment of all that is Godlike in man and beautiful in creation—the mystic link of holiness which unites man with the angels. What language can depict the anguish of a mother, as she lingers over the couch of a stricken child, and earnestly entreats the doctor to rescue her treasure from the ravages of death? Bright hopes and fond anticipations surround the cradle at early morn, the shadows of death gather over it at noon, and in the evening its occupant is a withered flower; the rosy cheek has changed to marble whiteness, "the silver cord is loosed, the golden bowl is broken, and the spirit returns to the God who gave it."

Every meeting of this Association brings us nearer the ark of safety found in preventive medicine, which is now extending its influence over every part of the civilized world, and is based upon the theory which was enunciated by Leeuwenhock in 1662. He discovered that the active principle in the process of fermentation depended upon a living organism; from which he concluded that the *contagium vivum* of all zymotic diseases must also reside in a vegetable parasite. Like discoveries in every other department of scientific investigation (notwithstanding every medical publicist since his time has had some opinion to express upon it), this theory was slow to secure that recognition to which its merits entitled it, being repeatedly forgotten and again revived until it was finally established that there are three distinct forms of parasitic life, viz.: vegetable, animal, and those that lie between the two. The vegetable form are of the nature of algæ or fungi, and are found in air, water, food and soil of all countries and climes. They are found on the highest mountains and in the lowest dells, riding upon the dust, the motes and the insects that float in the sunbeams.

From the day of Leeuwenhock to the present, the great effort of scientists has been to establish the causative relation of these organisms to the diseases in which they are found. This achievement was reserved for the present generation. The labors of Pasteur, Koch, Klein and other famous scientists, by the revelations of the microscope, have established the causative relation of micro-organisms to the infectious diseases of insects, plants, and animals, man included. Pasteur, pushing his investigations still further, has established beyond dispute the fact that the microbes found in the various tissues of the body, in certain infectious diseases of animals, can be carried through a series of culture, until they are completely dissociated from the individual tissue in which they were originally found, and the primary disease be reproduced by inoculation. The microbes which have been produced by this system of cultivation have been proven, under the microscope, to be identical with those found in the tissues of the body both before and after culture; thus proving, beyond question, the causative relation of these organisms to the diseases in which they occur.

These experiments have been made over and over again, with uniform results, in chicken cholera, murrain, splenic fever, etc. The rapidly accumulating evidence in favor of the theory rests upon the experimental researches above referred to, and the great avidity with which the medical mind has seized upon these disclosures is, to *me*, one of the most hopeful signs of advancement. If the germ theory be correct, each of the specific diseases has for its origin a specific parasite, capable of producing the disease in individuals not already protected by a previous attack, vaccination, inoculation or idiosyncrasy. Whenever the conditions requisite to the development of the specific germ of any of the zymotic diseases are fulfilled, whether these conditions depend upon telluric, atmospheric, or some other influence, they must exist. Once in force, the action of the specific poison takes effect on those individuals whose resisting power, either from enfeebled development or disease, is least. In severe epidemics, these influences grow more powerful from day to day, until those whose resisting power is least succumb to the disease. The crowning glory of medicine in the nineteenth century is the effort to perfect the system of sanitary science and to improve the physical and intellectual powers of man. To this end the public health associations, the innumerable county, city and State Boards of Health, as well as the best scientific ability both in and out of the profession, in all parts of the world, are lending their most earnest and zealous efforts.

As a result of these efforts, we find the annual report recently issued by Dr. William Ogle, of the Statistical Department of England, shows a decided diminution, in the last ten years, in the mortality due to the various zymotic diseases. The report shows conclusively that the decline is due to the diminished mortality among children of tender age. It appears from the following extracts that the annual deaths from scarlet fever have fallen from 972 to 716 per million; those from diphtheria from 185 to 121; those from bowel affections from 1,076 to 935. This is really a very satisfactory showing, when we consider how slow the vast majority of mankind (professional and unprofessional) are to accept any new dogma.

The report contains much valuable information, but as our paper is only to show that the diseases of children which are attended with the greatest fatality are being brought under such sanitary conditions as tend to lessen the mortality, we will follow it no further.

If we accept the estimate of statisticians of the actual cash value of each male and female who live to attain adolescence at one thousand dollars, then add to this financial value the intellectual worth of hundreds of thousands of children who perish annually from infectious diseases—that are in the main preventable—we have but a faint conception of the vast loss the world sustains by this fearful mortality.

In view of all this, humanity is ready to bow at the footstool of science, and beg that the ratio between those who live and those who die at the tender age be diminished, and that they have thrown around them the protecting care of hygienic medicine. The progress of science in none of its departments has ever reached the highest degree of perfection by steady, monotonous and gradual advancement. For long it has appeared to be so, until some fortunate individual, endowed with rare genius, utilizing the knowledge gained from all sources, has evolved from the womb of time some hidden truth which in a brief period has effected more than years of patient toil, and marked his epoch as an era, sending his name across the empyrean of thought like a meteor flashing across the heavens, winning for science incalculable benefits, and for himself glory and renown.

ORIGINAL ARTICLES.

ON THE TREATMENT OF DIPHTHERIA.[1]

BY DELASKIE MILLER, M.D.,
OF CHICAGO.
PROFESSOR OF OBSTETRICS AND DISEASES OF CHILDREN IN THE RUSH MEDICAL COLLEGE.

This paper is on the treatment of diphtheria. It is brief, for in this presence it would be inopportune to specify in minute detail all that would be required for the tyro. Nor shall your time be taxed by the recital of cases.

A summary of the treatment of diphtheria would hardly be intelligible without first defining in some particulars the nature of the disease. This will involve the question: Is diphtheria a local disease? If this disease consist essentially in the redness, swelling and soreness of the mucous membrane of some part of the throat, followed by the exudation and formation of a pseudo-membrane upon that part, then topical applications will constitute the rational and efficient mode of treatment.

The fascinations of science are liable to bias the mind and lead the judgment astray; as, for instance, the mycologist finds certain organisms—the bacterium termo and bacilli—in the pseudo-membrane in the throat; he observes further that these microbes multiply with great rapidity, and with the exudate constitute the pathognomonic membrane of diphtheria. Moreover, he may trace these micro-organisms, as they penetrate into the tissues, enter the blood-vessels and lymphatics, and through these channels, he assumes the general system and distant organs become affected. If this be true, and the only mode of attack, then the doctrine that the constitutional symptoms are secondary, and arise from the migration of germs from their nidus in some part of the faucial membrane, must be accepted. Again, because the local symptoms are sometimes severe while the general symptoms are mild, it is held that diphtheria is a local disease.

Diphtheria a general disease.

1. It is characterized by a period of incubation.
2. The general symptoms appear before the local.
3. The introduction of the germs by inoculation upon a distant part of the surface is followed by the appearance of the false membrane upon the faucial mucous membrane.
4. The membrane may form, under favorable conditions, upon various parts of the body.

These assumed facts would seem to be valid reasons for the belief that the throat affection is a local manifestation of a general disease.

Diphtheria is not croup.

1. Diphtheria is infectious. 1. Croup is not.
2. Diphtheria is a general disease. 2. Croup is local.
3. Diphtheria is an epidemic asthenic disease. 3. Croup is a sthenic local inflammation.
4. Diphtheria may be followed by paralysis. 4. Croup not.
5. Diphtheria may be complicated by albuminuria. 5. Croup not.
6. The diphtheritic membrane involves the subjacent tissues. 6. In croup the exudate becomes a solidifying membrane upon the mucous surface.

In the management of diphtheria it is of the first importance to recognize the infectious nature of the disease. For the protection, therefore, of the healthy, isolate the sick. The room assigned to the affected should contain only the simplest articles of furniture. Carpets, curtains and upholstered furniture should be removed. The atmosphere of the apartment should be kept at a uniform temperature of about 72°, and good ventilation should be secured without exposing the patient to draughts of air.

After the termination of the case, the thorough disinfection of the room, bedding and furniture should never be neglected, and the same may be affirmed of the clothing and persons of the attendants, and of the convalescing patient, as well.

The indications of treatment may be formulated as follows:

1. Destroy the septic germs in the blood.
2. Eliminate effete material from the system.
3. Prevent the formation of, or remove the pseudo-membrane.
4. Control pain and restlessness.
5. Sustain the strength of the patient.
6. Prevent the sequelæ.
7. Perform tracheotomy (?) or intubation.

The asthenic nature of the disease should be borne

[1] Read in the Section on Diseases of Children, at the Thirty-Seventh Annual Meeting of the American Medical Association.

in mind, even in the earliest stage, that the treatment may be preventive of the possible sudden prostration which precedes the dangerous complications. The alimentary canal should be freely evacuated. This may be accomplished by exhibiting some unirritating agent, as castor oil, rhubarb, or a suitable dose of the compound cathartic pill (½ grain or 1 grain).

Keeping in mind the indications which have been tabulated, some combination of remedies may be devised which will meet most of the requirements of the case. And it is fortunate that the remedies from which experience justifies an expectation of benefit are not incompatible, and may therefore be grouped. It is also worthy of consideration, that medicines intended for children especially should be rendered as palatable as possible. For this purpose the syrup of lemon may be substituted for the glycerine and water in the following prescription.

The following prescription is suggested as an example of such combination:

℞. Tr. ferri chloridi..... ℥j.
Potas. chlorat..... ℥ij.
Acid hydrochloric dil..... .. m xx.
Tr. capsici..... ℥j.
Morph. muriat..... gr. ss.
Glycerine..... ℥ij.
Aq. destil..... ℥ijss.
M. S. Give a teaspoonful every hour or two or three hours, according to the urgency of the symptoms.

Of course the proportions of the several ingredients will be varied in different cases to adjust the doses to the age and condition of the patient. The directions for taking the mixture given above, however, convey but an imperfect idea of the most efficient mode of using it. The patient should be required to take a drink of water, then immediately take the mixture undiluted. By this mode several indications are fulfilled at one and the same time. An efficient local application is made to the throat each time the mixture is administered, and the constitutional tonic, antiseptic and anodyne effects are also secured. The water which was taken before the medicine will be sufficient to properly dilute the remedies in the stomach, and thus prevent any irritation of that organ.

In mild cases this prescription will fill all indications, and a large proportion of cases in which this treatment was commenced early will progress and terminate as mild cases, which under some other course would prove severe and endanger the life. It will be unnecessary to annoy the patient by making other local applications. Moreover, there is good reason to assume that the paralysis which is sometimes a serious complication during the convalescence is due to impoverishment of the blood, the restoratives contained in this mixture should therefore prove a powerful preventive of this complication. Experience justifies this expectation, for paralysis will be encountered but seldom during the progress of the disease or in the convalescence.

The same may be affirmed of the effects of this mixture upon the local symptoms and upon the formation of the pseudo membrane. The local pain, the congestion and swelling are relieved, and it is not unusual to see the forming membrane disintegrate and disappear within twenty-four hours after commencing the treatment. The earlier suitable topical applications are made to the exudate the more easily may it be removed. Unquestionably the case is sometimes made worse instead of better by the frequent resort to the probang, charged with escharotics or irritating agents. Besides, the excitement produced by this procedure must result in injury to the patient, especially when force is required to overcome the resistance offered by the child from fear and dread of the operation.

The importance of surrounding the patient with a warm atmosphere has been asserted. It is also important that the air be kept moist. The inhalation of simple warm aqueous vapor will produce benefit by its solvent effect upon the exudate, and also by allaying irritation and discomfort of the fauces. While this is being done additional benefit will be attained by charging the vapor with some agent or agents of recognized power in resolving the membrane, and also efficient as antiseptics, as aqua calcis, ecalyptus, oil of turpentine. Pepsin or trypsin may have a beneficial effect in dissolving the membrane, when the ordinary remedies fail.

The steam atomizer will be found efficient in utilizing the vapor. After a certain age, no difficulty will be experienced in directing the spray into the throat. And even in cases of very young children, the timidity may be readily overcome by placing the atomizer when in use (and it should be in use while the false membrane persists) at a distance from the face, and gradually approximating it till the vapor is inhaled freely. The same object may be attained by causing the vapor, charged with the solvent, to rise from an open vessel placed contiguous to the patient.

Of albuminuria it need only be said that it is present in a large proportion of cases, and that while the kidney is large and pale, it is not indicative of the serious renal complications, as in scarlatina, and it is exceptional when any serious effects from it become chronic. Iron and chlorate of potash would seem to be indicated for this phase of the case, and these are contained in an eligible form in the prescription already given.

Too much stress cannot be laid upon the importance of snstaining the strength by the liberal use of nourishment. Though the patient may feel no desire for food, he may be induced to take it, if it is offered in a concentrated fluid form, which should be repeated at short intervals.

In conditions of great depression stimulants are indicated. It is a fact of common observation that alcoholic stimulants are well borne in diphtheria, and that intoxication is not likely to follow even the free administration of whiskey. So beneficial are stimulants, that the free use of spiritus frumenti is considered by some as specific treatment (?) in diphtheria. Under the same condition it will be natural to cast about for other active tonics, and quinine will be among those selected. That quinine produces any specific action in diphtheria is problematical, and when administered, it should be for its tonic effect.

Strychnia is the remedy frequently prescribed for the removal of paralysis complicating diphtheria, as

if this drug had some specific influence in restoring muscular power. Query—Can strychnia be relied on for restoring innervation in this, as in some other forms of paralysis? Are not the indications here first, to establish assimilation, and second, to improve the quality of the blood?

Galvanism is an agent of undoubted value in the treatment of these paralyses, by stimulating nervous power, by exciting muscular contractions and by increasing the nutrition of all the structures involved in the paresis.

Should tracheotomy be performed, even in extreme condition of the patient in diphtheria? It is true this operation has been performed many times when the patient was in great peril; and sometimes recovery has followed. It would be just to say that the recovery in at least a minor proportion of cases has been due to the operation. This, however, has happened so seldom that the procedure has long been regarded by the laity with disfavor; and were the whole truth stated, undoubtedly the profession regard tracheotomy as the forlorn hope. And furthermore, there is reason to believe that in a proportion of cases, the fatal result might have been avoided, had the surgical interference not been interposed.

When we review the past we can see but little in the results of tracheotomy that is reassuring. Any procedure, therefore, which promises equal benefits, and is at the same time free from the objections indicated, will surely be hailed as an improvement. Intubation, it is now claimed, offers these advantages. Since the revival of this procedure by Dr. O'Dwyer a little more than a year ago, it has been tested in many cases, and the results as reported have been so satisfactory as to encourage the hope that it will soon supersede tracheotomy, at least in the majority of cases. It is certainly free from the objections which render cutting so unpopular. The consent of the parents is easily obtained. No solution of the continuity of tissues is produced, to add to the complications which already exist. It is therefore bloodless. It is not particularly difficult of performance. The relief is many times immediate.

INTESTINAL ANTISEPSIS.[1]

BY D. N. KINSMAN, M.D.,

OF COLUMBUS, OHIO.

Cathartics have constituted no small part of the means employed in all ages in the treatment of disease. They have probably introduced the treatment of more cases of disease than any other class of remedies. Having been universally used they must have been found beneficial or they would have fallen into disuse. Their salutary influence has been explained by saying "they corrected the secretions," "*opened up the portal circulation*," cleansed the "*primæ viæ*;" that they acted by depletion, and derivation; that they stimulated the liver to increased secretion of the bile, and thus wrought out their errand of mercy.

[1] Read before the Ohio State Medical Society.

All this has been very satisfactory in times agone; but it is no longer sufficient for the demands of an exacting, if not an exact, professional science. Among cathartics, mercury in some form has readily held the first place, because it was easily administered, prompt in action and more certainly followed by good results than any other agent of this class.

Now is there any scientific basis for this confidence in the value of cathartics, and especially in the value of mercurials, or is it simply "a rule of thumb"? Is all which can be said on this subject contained in the maxim "*Experientia docet*"? Certainly there must be some reason for the use of these remedies aside from those already given, and it will be the object of this paper to see if it can be found out, and stated in clear and definite terms.

In order to get at the bottom of this matter let us take an inventory of the stock we have on hand, bearing on this subject. When we have accomplished this we shall find, I think, we can explain the beneficent action of cathartics, on the theory of antisepsis in a satisfactory manner, and at the same time find a solution for certain morbid processes hitherto imperfectly understood. We cannot hope to elucidate everything that lies in this direction, but we can perhaps "blaze a way" along which some wiser one will build a royal road.

Digestion is partially, not wholly, accomplished by bringing the food into contact with the unorganized ferments. These are ptyaline, pepsine, pancreatine, etc. Ewald says that at its last reduction digestion is a process of hydration. By the action of the saliva and the pancreatic juice, starch $C_6H_{10}O_6$ becomes $C_6H_{12}O_6$ or $C_{12}H_{22}O_{11}$, as the change results in glucose or maltose. By the action of the gastric juice albuminoids are changed into albuminose, or peptones. They are readily soluble in water, immediately absorbed, and cannot be recognized in the blood; being, as it is believed, reconverted into albumen. On the pancreatic juice we depend for still further action upon starches, the proteids, and fats. A peptone is produced in an alkaline fluid which differs but little from that produced in the stomach in an acid medium (Foster). Leucin and tyrosin are also produced from the proteids. The fats are split up into glycerine and acids, as well as emulsified by the action of the pancreatic secretion.

So much is accomplished in the process of digestion by means of the unorganized ferments. These are chemical agents, and as such can have but a single course of action, other things being equal. The organized ferments, of which we shall speak hereafter, may be modified in their action apparently in a variety of ways—either by the liquids in which they grow, the presence or absence of air, etc. The action of organized ferments results in putrefaction; while the statement is made on authority that the gastric juice *arrests* putrefaction. Whether this be so or not is not deemed important in this discussion.

Putrefaction, then, is the result of bacterial action. A great number of bacteria enter into this process. By their action starch is changed into sugar, and sugar is changed into lactic acid, butyric acid, and mucilage, alcohol into acetic acid, urea into carbon-

ate of ammonia, albumen into peptones and other similar products, and in the midst of this process other bodies are produced. These bodies are quaternary alkaloids of various chemical reactions; some are poisonous and some are not. They are now known as ptomaines. Besides these, indol, phenol, skatol, sulphuretted hydrogen, ammonia, carbonic acid, and water, are produced. This is sufficient to show that to some extent the process of digestion is similar to that of putrefaction. But putrefaction is due to bacterial action, and when we learn that indol, phenol, and skatol are produced in the process of digestion, as we call the reduction of the food in the stomach and the intestines, we are led to inquire if the digestion of the food is not supplemented by bacterial action in the intestines. Putrefaction cannot take place when bacteria are excluded. This is placed beyond dispute by the experiments of Koch, Pasteur, and others, and the whole doctrine of antiseptic surgery rests on this affirmation.

I think I shall be able to show that when digestion is not normally performed, it is fair to infer the anomaly does not depend upon variation in the quantity or quality of the gastric or other digestive fluids, but upon the subversion of the power of the normal fluids by intense bacterial action. In other words, the process is no longer one of digestion, but of putrefaction.

The specific action of a few bacteria is known. The bacillus amylo-bacter is everywhere the cause of butyric fermentation. It changes, starch, sugar and lactic acid into butyric acid. The lactic acid ferment, which is a bacillus, changes milk sugar into lactic acid. *Mycoderma aceti* changes alcohol into vinegar. These are but a few of the immense number of the bacteria in the stomach and intestines. The quantity of hydrochloric acid in the normal gastric juice is but .2 per cent.; when the proportion is increased to .6 per cent. digestion is arrested. When the fluids of the stomach become intensely acid, rise in the throat and set the teeth on edge, this acidity is due to bacterial action, or putrefaction of the food materials in the stomach. It is an evidence that putrefaction in the stomach and intestines is no longer supplementing the action of the unorganized ferments, but has taken its place. This bacterial action upon the food in the bowels is evidently much more important than has been usually supposed.

Duclaux says that the action of bacteria is as important as that of the normal intestinal liquids in the process of digestion in adults. There is reason to believe that all experiments which have been hitherto performed to ascertain definitely the action of the unorganized ferments will have to be considered anew, for it is now evident most, if not all, are vitiated by a failure to take account of bacterial action. It seems probable that most of the changes which occur in the intestines which have been attributed to the *succus entericus*, are due to *bacterial action.*

"The meconium contains no bacteria. Bienstock has isolated five different bacteria in the stools. Bacteria which are so numerous in the mouth do not pass into the intestines but are slain in the stomach by the gastric juice. There are five kinds of bacilli in the stools. The first two determine no disease in mice; the third is pathogenic; its culture determines œdema and death in mice in twenty-four hours. The fourth and fifth are very important in the phenomena of digestion. They are not found in the stools of infants until after weaning." This, coupled with the statement of Senator that there is no indol or phenol in the intestines of the nursing infant, is important. "One of these bacilli decomposes albumen, the other hydro-carbons. *The first is not found in the stools of infants fed solely on milk.*" Hence there is neither indol or phenol in these stools, these products being the index of bacillar action or putrefactive changes.

Bienstock proposed the following questions: "Will the last two bacilli decompose sterilized albumen while the first three will not? Are products (indol, phenol, etc.) formed during the life of these bacilli by the decomposition of albumenoids and carbohydrates? Finally, whether it was possible to cultivate these bacteria to a state of purity, both before and after the decomposition of albumen? All of these questions were answered affirmatively. Bacillus number 4 always produced peptones from albumen and gelatine." I may remark here that the pancreatic fluid does not produce peptones from gelatine (Foster), and the products described by Nencki, Bauman, Salkowski, and others, (*i.e.*, indol, phenol, skatol). Bacillus number 5 by action on milk formed alcohol and lactic acid.

These bacilli decompose albumen and hydrocarbons in the intestines.[1] The *bacillus subtilis* produces peptones, as one of its functions in the process of putrefaction. In the germination of seeds we can study the action of bacteria upon starches, as we have studied their action in digestion. Germination is involved in putrefaction. "That which thou sowest is not quickened except it die." Bacteria, and not light, heat, and moisture, are the agents which inaugurate those changes in the seed which cause them to grow. They set in motion those forces which produce the blade, the ear, the full corn in the ear. Sterilized seeds were planted in sterilized soil, moistened by sterilized milk; all was enclosed in sterilized glass vessels, the openings to which were stopped with cotton. Air was thus allowed free access, but it was filtered from all bacteria. Under the most favorable conditions the process of germination was in abeyance for eighty-five days. The stopper of cotton was then removed, when at once germination begun.[2]

We have then found a solution for the production of diastase in the germination of seeds in the action of bacilli, a process hitherto most mysterious. Out of putrefaction life arises in the growth of the plant. So out of putrefaction—as well as digestion—arises the protoplasm which nourishes our bodies.

But digestion in the intestines not only produces that which, by absorption, builds our bodies; but in like manner poisons are produced which, in the mysterious economy of nutrition, are destroyed, when its processes are normal, or when they are disordered they accumulate and work mischief and death. In

[1] "Bacteria," Cornil & Babes, p. 124 et. seq.
[2] Progrès Médical, 1885.

the process of putrefaction poisons are elaborated which are deadly. Deaths from wounds infected with cadaveric poisons are sufficiently common to leave no doubt on this point. These are undoubtedly due to the bacteria. These alkaloids have been isolated from the putrefying flesh and injected into animals with fatal results. In like manner poisons have been extracted by dialysis from the contents of the intestines which have been injected into the bodies of animals with like fatal results.

Selmi and others assert that indol, skatol and phenol in the intestines are the indices of bacterial or putrefactive decompositions in the intestines. Of this there can be no doubt when we remember these substances are not present in the intestines of the young whose stools contain no bacilli.

If poisons capable of absorption are produced in the intestines, what becomes of them, and how is the system protected from injury? Schiff showed long ago that if the portal vein was ligated in an animal during the digestion of a meal, the blood in the right ventricle became intensely toxic, and this toxicity did not otherwise exist to so great an extent. He therefore concluded one function of the liver was the destruction of poisons which were introduced from the alimentary tract. Recently M. Rogers, studying the action of the liver on various poisons, has concluded, in accordance with the opinion of Schiff, that the liver arrests notable proportions of various alkaloids introduced into the organism, such as nicotine, strychnine, cicutine, veratrine, and caffeine. He has found the liver exercises a similar action upon alcoholic extracts of putrid substances, and intestinal contents. He has demonstrated that normally the portal vein contains toxic substances arising from intestinal fermentations.

In order to kill a rabbit weighing one kilogramme it was necessary to inject twenty-five cubic centimetres of dog's blood coming from the jugular or crural vein, eleven cubic centimetres from the portal vein, and twenty-two cubic centimetres from the hepatic vein. After intestinal antisepsis a dose of twenty-two centimetres was required of the blood of the portal vein. This author found that this function of the liver disappeared when it no longer contained glycogen.[3]

Indol, phenol and skatol are substances which enable us to recognize putrefaction, whether they are found inside or outside of the body. Indican in the urine is the index of the formation of indol in the intestines, and indol is due to bacterial activity. The urine of the newly born child contains no indican, and the meconium no bacteria and no indol. Hence it seems demonstrated that the urinary indican expresses the amount of indol absorbed. Indican is increased in the urine, in intestinal invagination and peritonitis, in typhoid fever, cholera morbus, cholera infantum, in the diarrhœa of consumptives, chronic gastritis, and cancer of the stomach and liver, as well as Asiatic cholera, dilatation of the stomach, and lienteric diarrhœas.[4]

[3] Progrès Médical, No. 8, 1886.
[4] Arch. Gén. de Médecine, 1884.

Indican is said to be increased in obstruction of the small intestines, and unaltered in that of the larger. Hence it becomes of value in the determination of the location of strictures of the bowel.

Bouchard has studied this subject clinically. He has found fresh fæcal matters contain alkaloids in much greater quantity than the urine, and the richness of the intestinal matters in alkaloids is proportional to the intensity of the intestinal fermentations. In a case of putrid diarrhœa he estimated the proportion of bacilli at one-third of the mass, and the alkaloids at fifteen milligrammes per kilo, the urine contained forty or fifty times as many alkaloids as normally. Putrefaction in the intestines produces a large number of products, such as ammonia, marsh gas, sulph-hydric acid, butyric acid, lactic acid, and indol, phenol, excretive and quaternary alkaloids. Bouchard has introduced these matters into animals by the stomach, lungs, subcutaneously, or into the veins. Coma, convulsions and paralysis have succeeded large doses. In men headache, vertigo, ringing in the ears, deafness, fatigue, and depression of spirits succeed the administration of small doses. Intestinal occlusion and long retention of fæcal matters increase the alkaloids in the urine, and are the symptoms of intoxication.[5]

Bouchard formulated three propositions:[6]

1. Alkaloids exist normally in the bodies of living individuals.

2. These alkaloids are found in the digestive tubes and are probably elaborated by the vegetable organisms which are the agents of intestinal putrefaction.

3. The alkaloids of the urine normally represent a part of the alkaloids of the intestines absorbed by the mucous membrane and removed by the kidneys.

On March 22, 1886, Bouchard continued a report of his investigations upon the poisons existing in the normal urine. He says the organism is fortified against self-poisoning:

1. By intra-organic oxidations.

2. By the liver, which arrests some and destroys others.

3. By the emunctories, which excrete them in great abundance.

4. The well-conditioned man produces in a mean of two days and four hours a mass of urinary poison sufficient to poison him.

The toxicity of normal urine has been demonstrated by intra-venous injection in rabbits, and it has been observed times without number in cases of urinary infiltration in the human being, who in the highest health has suffered from traumatism. "The symptoms following the injection of normal urine are contracted pupils, accelerated respirations, frequent urination, somnolence, diminished reflex action, and death without convulsions." This toxicity is increased by simple colds, any fever, or other indispositions. The toxic principle seems to reside in the coloring matter, for by passing the urine through animal charcoal its toxicity is diminished.[7]

The foregoing much too brief discussion I think

[5] Comby, Progrès Médical, May, 1884.
[6] Progrès Médical, December, 1884.
[7] Progrès Médical, loc. cit.

sufficiently establishes: that putrefaction plays no unimportant part in normal digestion; that this putrefactive process may exceed the bounds compatible with health, and even life; and that by a careful study of the urine we have the means in our hands which will enable us to recognize many hitherto unrecognized conditions as the result of auto-intoxication from products elaborated in intestinal putrefactions.

We shall now turn our attention to the investigation of certain diseases of the intestines, and see what can be learned of their special pathology. M. Damaschino reports observations made upon infants, in whom the matters passed are either green when they are voided or become so on exposure to the air. The latter form frequently runs into the former, and is not uncommonly the prelude of *cholera infantum*. When these green matters are spread upon a cover, stained with methyl violet, an immense number of bacilli are revealed, and their number augments as the affection becomes severe; as the disease declines the number decreases. These bacilli are never found in the cells or in the epithelial masses, but between them; they are sometimes united in an albumenous matter. The stools of patients with green diarrhœa have no resemblance to those of yellow diarrhœa in their bacillary contents.[8]

I may here remark that during the year 1885 I made many observations upon the stools of patients with diarrhœa, answering to the description given above, and can confirm its accuracy. I have further studied the stools of patients with *cholera infantum* and *cholera nostras*, and in both I was surprised to find the solid matter of the stools seemed to be composed almost entirely of bacilli instead of salt crystals, epithelial cells and intestinal mucus. In some of these cases I was able to detect a decided increase in the quantity of indican in the urine. This conclusion was confirmed by Dr. O'Brine, of the Ohio State University, who is an expert analytical chemist. In these cases, then, we have learned there are enormous numbers of bacilli in the intestinal discharges; we have also proven the presence of an increased amount of indican in the urine, two factors of great importance. From the statement of Damaschino, quoted above, we learn that in the green diarrhœa, which is frequently the prelude to cholera infantum, there is an immense number of bacilli; from other authorities we learn indican is increased in the urine in cholera infantum.

How are we to interpret the relation of cholera infantum and the bacilli? These are the agents of putrefactive changes in the food materials in the intestinal canal. In this putrefaction poisonous alkaloids are produced. These are absorbed and produce acute poisoning, as shown by diarrhœa, vomiting, and collapse. Should this seem a fanciful explanation of these conditions, when we have so often observed, either in our own practice, or read accounts of, cases of meat poisonings, which are due to flesh in the process of putrefaction, from which ptomaines have been extracted capable of producing similar symptoms? Heat cannot be ignored as a factor, but it must rank as a predisposing cause. If anything more, why do not cases of cholera infantum occur just as frequently among children who are nursed at their mother's breast? The answer is this, as already quoted from the investigations of Bienstock: There are no bacilli in the intestines of children fed on *pure milk diet; i.e.*, at the mother's breast; hence no chance for fermentation, and consequent poisoning from the products of fermentation.

When mixed food is used the possibility for pure feeding is gone. How often an outbreak of cholera infantum has followed the eating of a bad conditioned banana or apple. As we know that the agents which produce putrefaction are the same both inside and outside the body, we can understand why the introduction of swarms of bacilli into the intestinal canal by means of decaying fruits, would be fraught with greater dangers far to the child than its exposure to heat. Hence we conclude heat acts in producing cholera infantum by rendering bacillar infection of the intestine easier, rather than by overcoming the vaso-motor system.

In like manner we would explain the causation of attacks of cholera morbus and simple cholera. A ptomaine extracted from pure cultures of the cholera bacillus will produce all the phenomena of cholera, equally as well as the injection of the fluid from the intestines of the victims of the disease. Nor are the alkaloids produced in the intestines of the same kind always; as the bacilli may vary, so too may their products, and their effects upon the organization. Instead of vomiting, diarrhœa, and collapse, we may have headache, fainting, lethargy, palpitation of the heart, eructations, mental depression, distension of stomach and bowels, aching in limbs, and indisposition, as well as incapacity for muscular exertion, somnolence, etc.

But in all cases in which an examination of the urine reveals an increase of indican, we may with confidence attribute the symptoms to auto-intoxication from products of intestinal fermentations. While laying so much stress upon the action of the intestinal ptomaines, I ought perhaps to mention Gautier's new observations on the leucomaines—alkaloids which are produced in the normal disintegration of the body, which have been eagerly seized upon by the opponents of bacterial pathology to explain all forms of auto-intoxication. Manifestly they do not act as poisons unless they accumulate; when they accumulate they do not act as promptly or as energetically as the ptomaines, and at present the quantity of leucomaines known to exist at any time in the body has an almost insignificant relation to that of the ptomaines which may be extracted. After this the ptomaines and the leucomaines must be considered when the subject of uræmic intoxication comes up for discussion, and it seems to my mind very probable that the doctrine of the production of ptomaines by intestinal putrefaction is going to help us explain some of the phenomena which, under our present theories, are totally inexplicable.

How, for instance, can we explain the occurrence of convulsions in one case of uræmia, and their absence and a condition of coma in another case, if the

[8] Progrès Médical, December, 1884.

cause be the same in both cases? We know there are many varieties of bacilli in the intestines, and they produce many alkaloids. Some are harmless, others are convulsant, like strychnine, and others still, act like atropine. On the assumption of the formation of different alkaloids we can account for the various manifestations of intoxication when they are absorbed. Between the formation of toxic alkaloids and their fatal manifestation after absorption into the system, stands first the liver, which destroys notable proportions, as shown by Roger; then another portion eliminated from the blood by the action of the healthy epithelium of the renal tubules; and if in any case either of these guardians of the portal of life fails, the result is inevitable—death comes by convulsions or by coma.

Since writing the above Bouchard's conclusions from the study of the urine in the production of uræmia have come into my hands. They have not yet been published by him, and I have to take them second hand. I make the following condensation of his views, from a "critical review" of the subject.[9] Seven substances enter into the production of the phenomena of uræmia:

1. The diuretic, which is urea.

2. The narcotic, whose nature is yet unknown; all that can be said is that it is organic, not fixed by charcoal, soluble in alcohol.

3. A sialogue, organic; like the former, of unknown nature.

4. There are two *convulsants*. These do not manifest their action when the urine is injected, for the narcotic kills before they can act.

5. A substance which contracts the pupil.

6. Finally, there is a substance which depresses the temperature. After the injection of urine the animal cools.

Here is a scheme which includes all the factors which are necessary to explain a uræmic attack. The organic compounds creatine, creatinine, leucine, tyrosine, etc., have no effect. The potassic salts in excess have a poisonous influence. The scheme which he proposes for *pathogenic treatment* is: Hinder tissue metamorphosis, diminish the action of the liver, administer an aliment containing few minerals, oppose *intestinal* putrefactions.

I will cite some cases illustrating forms of intoxication from putrefactions in the intestines.

"A professor, æt. 38, robust, was taken during the night of the 4th or 5th of January with violent colics after having eaten and drunken copiously. He performed his duties the next day in school. The colic continued and became more violent; he went to bed in the evening, and when I saw him he complained of nothing but abdominal pains and diarrhœa. Pulse 76; skin moist; tongue coated; no appetite. No bad odor of breath; discharges odorless; belly not swollen, but resistant. Pressure is painful in the ileo-cæcal region, over a space the size of palm of hand. Low-pitched tympanitic sound here. Night disturbed by vomiting. In the morning patient had discharges with the odor of rotten eggs. I am able to confirm this assertion of the patient. While I was examining him he tried to rise and fainted; his lips became pale, pulse frequent and feeble, sometimes not perceptible; pupils normal, reacting to light. This lasted a minute and one-half or two minutes. The patient recovering from this, complained of præcordial distress and clouds before the eyes. After this attack he had a discharge of urine with the odor of sulphuretted hydrogen, and it blackened acetate of lead. The weight and anxiety persisted. He had a similar attack in the afternoon. The urine no longer contained sulphuretted hydrogen. In the evening there was little fever; at midnight copious stool. Patient was well next day. Senator was of the opinion the sulphuretted hydrogen was produced by intestinal putrefaction, which determined all the symptoms."[10]

The above case is a fair example of intense poisoning from bacterial or putrefactive processes in the intestines, and illustrates the statement of Bouchard: If the poison produced in a day was at once absorbed death would result instantly.

Mrs. A., aged 30, supposed to have had an abortion a week previously; no flowing for three days. Vomits now and has constantly for several days. Nourished by peptonized milk by rectum. Pulse 110, feeble; skin pallid and moist; temperature normal. Lethargic, speaks only on being addressed, somnolent. Abdomen distended, no painful spots; tongue dry and coated; pupils dilated. Having in view the possibility of poisoning from intestinal fermentations, stopped all rectal alimentation, and gave gr. ¼ doses of calomel rubbed up with milk and sugar every three hours. This was continued for two days, when, the bowels having been freely moved thereby —as well as rendered antiseptic—the patient was relieved of all bad symptoms, and from this time made an uninterrupted recovery. The urine was not examined in this case.

How often in the "second summer" we observe cases like the following: Child, 18 months, weaned in early summer, begins to emaciate, vomits occasionally milk in curds, has pasty, greenish, acid stools, or when he eats meats they escape in the same kind of masses, and with little or no change of character by the action of the digestive fluids. There are attacks of diarrhœa, and the stools are composed of mucus, with small quantities of what seems to be fæcal matter. The skin is pallid or sallow, flaccid and non-elastic. The abdomen is distended, the sleep disturbed, and there is grinding of teeth. Sometimes convulsions, at other times depressions with sweats.

Again, in adults there are cases of watery diarrhœa which persist for weeks and months in spite of simple evacuants and astringents. The stools are largely composed of bacilli, and the urine loaded with indican. Here small doses of mercury work wonders.

There is no doubt but the bile has an office in the prevention of intestinal putrefactions. We are all quite familiar with cases in which the stools remain clayey, which are also intolerably fetid. By common consent this condition has been attributed to the want of bile in the intestines, by failure of secretion or from

[9] Uræmia by Giraudeau. Arch. Gén. de Méd., 1866, p. 212, et seq.

[10] Arch. Gén. de Méd., 1884, p. 484.

obstruction. Calomel or blue pill has been administered for time out of mind for this condition with favorable results. The benefits derived were supposed to be due to the action of calomel in increasing the flow of bile. Years ago the British Commission appointed to investigate the alleged cholagogue action of mercury reported that it had no such action; and yet the fact remains, established by the experience of hundreds of careful observers, that mercurials produce good results in such cases. Other theories rose to explain this benignant action of mercury. Bacteriological studies have led us to the conclusion that mercury, instead of increasing the natural antiseptic of the intestines, either directly or indirectly, destroys the bacteria, and thus performs for the system a duty which it can no longer discharge.

It has been long known that mercurials have a special action upon the small intestines. It is said they remove the excess of peptones, and thus relieve the headache, bad taste, aching in the muscles, foul eructations, abdominal distension and feeling of general malaise which so often follow the indulgence in a full banquet, washed down with "copious draughts of generous wine." This is due to the antiseptic action of the drug, for I have seen it produce the same result in doses much too small to produce catharsis. Other drugs fail to do this even when the catharsis has been prompt and voluminous. I know of no means so potent for arresting the fermentations which hold high carnival in the stomach and bowels of the patient who has been on a prolonged drunken spree as a mercurial. That bacterial action is raging, and is a cause of many, if not most of the nervous phenomena, any one who examines the ejecta from the stomach and bowels of such patients may easily learn. The bad odor of such patients is not due entirely to alcohol. In dilatation of the stomach and other affections we can use mercurials to advantage for their antiseptic action.

Liebermeister says, after having used calomel in about 800 cases of typhoid fever: "I have every reason to continue it and recommend it to others."[11] Whether calomel acts by elimination of the poison by its cathartic action or not Liebermeister does not say. But it does lower temperature, and reduces mortality. It has been used in doses of from gr. iv to xx. The examinations of bacteriologists and the general course of the fever lead us to believe that typhoid fever is of parasitic origin. Without pressing this statement, we all know that putrefactions are intense in the small intestines in this disease, and we can readily see that if mercurials are introduced into the intestines of patients they will act on the bacilli which are the cause of putrefaction, and thus remove one incident in the course of systematic poisoning which occurs in this disease. The testimony of Senator on the increase of indol in the stools and of indican in the urine, is conclusive, and enables us to thus explain the action of calomel in reducing the mortality of typhoid fever.

In the treatment of the early stages of cholera infantum mercurials have been used from the time they were introduced. Tho' some authorities write doubtfully of their value, there are but few who have not used them with advantage. Their value in this disease is to be attributed to their antiseptic or disinfectant properties, which thus prevent ptomaine poisoning. Other agents have been used in attempted antisepsis of the stomach and bowels. Mercury has been ever and is still the Samson of them all. Pumps and syphons drain, cathartics empty. Mercury kills the morbific agent on the spot, and destroys its producing power. Phenic acid, iodine, bromine, salicylic acid, thymol, and many other agents have been tried, but with no such results.

Bouchard has endeavored to draw therapeutic results from his researches. Since toxic matters are constantly pouring into the intestines he has endeavored to oppose their absorption by fixing these substances. In typhoid fever he has given charcoal in quantities of 100 grams daily, and has thus completely disinfected the typhoid stools; all the fetid substances which give odor to these stools are fixed by charcoal. Under this treatment the alkaloids in the stools and urine diminished. The power of charcoal for fixation will be comprehended when it is remembered that 100 grammes of this impalpable powder represents a surface of 60 square metres. Bouchard has also used iodoform in fine powder, so that a dose of 40 centigrams represents also a surface of about sixty square metres. We may by these means accomplish the antisepsis of the intestines.[12]

Of all disinfectants mercury in some form now holds the first place. Corrosive sublimate in a dose of 80 milligrams (1/8 grain) will sterilize a litre of meal juice which is swarming with bacteria. This is a large dose of corrosive sublimate by the stomach, but it has tremendous energy. It may, however, be given three times a day in this dose. Phenic acid to accomplish a similar work, must be given in a dose of 100 grains—clearly impracticable from its size if it was not at the same time poisonous. The same objections hold against all the other disinfectants.

I think we have arrived at bed-rock, and are now ready to formulate why mercury has been used and is likely to be used in all time, and also why it has done good and will continue to do good. I think that I may draw the following conclusions:

1. Digestion is due to unorganized and organized ferments, *i. e.*, bacteria.

2. Dyspeptic phenomena are probably due to bacterial action, *i. e.*, fermentations.

3. In these fermentations, ptomaines, indol, skatol, phenol, etc., are formed as in putrefactions.

4. The presence of indol, skatol and phenol is evidence of bacterial action, *a*, because in the meconium there are none of these products; *b*, they are absent in the stools of nursing children; *c*, in the urine of the newborn and the nursing child there is no indican; *d*, when these children begin mixed feeding bacilli appear, and with them indol in the stools, and indican in the urine.

5. These bacilli, while causing putrefactions, produce poisons, which are normally destroyed in the liver, or stored therein, or excreted by the kidneys and bowels.

[11] Zeimsen's Cyclopædia of Medicine, Vol. I, p. 201, et seq.

[12] Comby. Progrès Médical, May, 1884.

6. When the function of the liver is disturbed from any cause, so that the antiseptic action of bile is no longer exerted, the putrefaction and its products increase.

7. Mercurials, by arresting fermentations when in excess in the intestines, prevent the formation of ptomaines and autointoxication and supplement the action of the liver.

8. The beneficial action of mercury is due to its antiseptic properties.

9. Antiseptic medication is indicated in all cases when the indican is in excess in the urine.

MEDICAL PROGRESS.

DIAGNOSIS BETWEEN DISTENSION OF THE FALLOPIAN TUBES AND FIBROMYOMATA OF THE UTERUS.—In a note on this subject DR. P. HORROCKS says: The diagnosis of distension of the Fallopian tube, in the present state of our knowledge, is very difficult; indeed, those who have had the largest experience in operating for this disease, admit that they are never sure that the tube is diseased or distended until they have got it outside, through the abdominal wound. But this difficulty of diagnosis is due to the similarity between distension of the Fallopian tube and many other conditions, more especially pelvic cellulitis, pelvic peritonitis, and ovarian disease. It is, as a rule, not difficult to distinguish between fibromyoma of the uterus and distended Fallopian tube. The broad distinctions between these two conditions are as follows:

1. Fibromyomata, are usually accompanied by menorrhagia, and distensions of the tube are not.

2. Fibromyomata, especially when intermural, cause uterine enlargement; whilst, in distension of the Fallopian tube, the uterus is not enlarged, or only slightly, unless complicated by some other condition.

3. Fibromyomata are usually painless, except that there is often dysmenorrhœa (as in my case, published March 6), and, if large, a bearing-down pain, or sense of weight; whilst, in distention of the tube, the pain is constant throughout the intermenstrual period, aching in character, and aggravated by the menstrual period.

4. Nutrition is not much affected in fibromyomata, whilst it is in distension of the tube, especially when the distension is caused by pus; hence, wasting or loss of flesh is a valuable distinction.

5. The temperature is normal in fibromyomata, raised more or less according to nature and amount, in distensions of the tube.

6. Fibromyomata, when intermural, move much more rigidly with the uterus than distensions of the Fallopian tube.

7. Fibromyomata are much less painful, on pressure, than distensions of the tube.

8. Fibromyomata are usually much firmer in consistence than distensions of the tube.

9. Intermenstrual discharges, usually yellow, are much commoner in distension of the Fallopian tube than in fibromyomata.

10. The position and direction of the uterine cavity is much more affected by fibromyomata than by distension of the tube.

11. Fibromyomata are usually more or less spherical, distensions of the Fallopian tube cylindrical.

12. Aspiration yields serum or pus in hydrosalpinx or pyosalpinx; and blood in fibromyomata and hæmatosalpinx.

13. Distensions of the Fallopian tube are accompanied by pelvic inflammation much more frequently than fibromyomata.

These are, in my experience, the broad distinctions between these two diseases. Exceptional cases occur where the diagnosis is not so easy; but distension of the Fallopian tube is much more likely to be mistaken for some disease of the ovary or broad ligament, rather than for fibromyoma of the uterus.—*British Medical Journal*, May 1, 1886.

SUCCESSFUL EXTIRPATION OF THE SPLEEN.—*La Gazzetta degli Ospitali* (May 23) reports a case from the surgical clinique of the University of Genoa in which Professor A. Ceci removed a greatly enlarged spleen. The patient, an imperfectly developed and very thin girl, aged 17, weighing 40 kilogrammes, and 1.40 metre in height, with very small pulse, had had an abdominal tumor from birth. The transverse diameter of the tumor was 34 centim., the vertical 23 centim., and the circumference about 64 centim. The anterior surface was smooth and convex, the margins sharp and fissured. The posterior surface presented a large lobe on the left. The abdominal walls were very flaccid, so that the tumor could be completely rotated vertically and transversely, and also be pushed into the left hypochondrium, whence, however, the respiratory movements soon caused it to advance to the front of the abdomen. The liver was in normal position. The enormous size of the floating spleen interfered with the patient's movement and nutrition, and was an occasional source of severe attacks of pain, radiating from the left hypochondrium to the præcordial region and the left upper limb, and attended with violent dyspnœa and insensibility. Extirpation having been resolved upon, it was performed on March 20, with strict antiseptic precautions. The incision in the linea alba from above downwards through the umbilicus was 23 centim. (9¼ in.) in length. On opening the abdomen, serious signs of suffocation compelled the suspension of the operation for nearly thirty minutes. Anæsthesia having been commenced with bichloride of methylene, chloroform was substituted for it. A triple catgut and carbolized silk ligature having been applied to the pedicle, it was dropped in. The peritoneum was sutured separately. The abdominal walls were brought together by three metallic points, after Billroth's method. The splenic artery was larger than the subclavian. The whole operation, including the whole interruption, lasted an hour and a quarter. Violent delirium and nervous phenomena simulating angina pectoris soon followed. For two days the pulse could not be counted, and the respiration varied from

70 to 80 per minute. The treatment was by oxygen and nutritive clysters. The wound was first dressed on the eighth day, and almost the whole of the wound-tract suppurated. In spite of strict antiseptic treatment erysipelas supervened, and yet the patient recovered. On April 22 (thirty-one days after the operation) her condition was reported as excellent, only a small superficial wound remaining. The extirpated spleen, with the contained blood, weighed 2400 grammes, equal to 37,036.8 grains, or 77.16 ounces. A courteous note just received from Professor Ceci states the patient is in good health; pulse 80; respiration 22; weight increasing rapidly; complexion florid.—*Lancet*, June 5, 1886.

PHOTOGRAPHING THE RETINA OF THE LIVING HUMAN EYE.—A paper with this heading appears in the *Photographic News* of May 7, by MR. W. T. JACKMAN, of Coggleshall, Essex, and MR. J. D. WEBSTER, and the authors of that paper have been kind enough to forward to us specimens of the photographs they have obtained. The difficulties of making a good photograph of the fundus are extreme, and we can only congratulate these gentlemen on the results of their labors, though it must be admitted that, as yet, it only appears to be possible to obtain a picture of the optic disc and of the retinal vessels as they cross the disc. The first experiments of Messrs. Jackman and Webster were made by placing a small camera fitted with a 2 in. lens in the place of the observer's eye behind an ordinary ophthalmoscopic mirror, but subsequently various modifications were introduced which are fully detailed in the paper referred to. The best light was found to be an albocarbon gaslight, having a reflector behind it and a bull's eye lens in front. It was well borne by the eye. The reflection from the surface of the cornea was long found to be very embarassing, but it was overcome with the exercise of a little ingenuity. In the photograph we have received, the physiological cup in the centre of the disc is very perceptible with the marginal portion of the disc, and the main blood-vessels and their primary divisions are distinctly marked. The result is sufficiently encouraging to lead us to recommend the authors of the paper to persevere in their efforts, and not to be discouraged by failure. Much greater difficulties than those which are here presented have been overcome by patience and the intelligent application of existing knowledge, and we expect soon to receive a still more satisfactory representation of the fundus of the eye.—*Lancet*, May 29, 1886.

OPERATION IN HYDATID DISEASE OF THE LIVER.—DR. SPISHARNY, of Moscow, describes, in the *Vratch*, three cases under the care of Professor Sklifassovsky. All recovered. In one case, a cyst had already burst into the pleural cavity. The Professor is strongly in favor of free incision, and sewing of the wall of the cyst to the edges of the abdominal wound. Statistics are in favor of this proceeding. Neisser has collected 300 cases of hydatid disease of the liver treated after different methods, with Listerian precautions. The results were mostly unsatisfactory. The majority of this series were treated by puncture. Better results were claimed in 1885, by the Mecklenburg physicians and surgeons, in a series of 132 cases. In twenty-five cases, the cyst was allowed to burst spontaneously; 52 per cent. of these died. In seventeen, the cyst was punctured, with 58 per cent. mortality. In twenty-eight cases, incision and fixation of the cyst-wall was performed, with only 20 per cent. mortality. Korach has employed incision in eighteen cases; in six of these, the incision through integuments and cyst-wall was done in two stages. All of these latter recovered; one out of the remaining twelve died. Incision is becoming the most popular method amongst Russian surgeons, who have considerable opportunities of studying hydatid disease in their wards. There can be no doubt that aspiration is a dangerous proceeding. Incision is generally satisfactory, provided that there is no cyst behind that which is opened. If there be another, or several other cysts, the risk of fatal suppuration will be very great.—*British Medical Journal*, May 8, 1886.

ON STRYCHNINE IN DIPSOMANIA.—In the *Vratch*, No. 10, 1886, p. 177, DR. U. M. POPOFF, of St. Petersburg, states that, guided by the works of Magnus Huss, Luton, Dujardin-Beaumetz, and others, he employed nitrate of strychnine in two typical cases of dipsomania, and obtained strikingly successful therapeutic results. In one of the patients a (very gifted man of letters, aged 40), the alkaloid was administered under the skin, in the dose of $\frac{1}{30}$ of a grain at first (during a drinking bout) daily, then every other day, then twice a week, etc. The patient ceased to ask for drink after the second injection; within the next two days, various morbid phenomena (headache, weakness, discomfort, etc.) disappeared. On subsequent occasions, a few injections of $\frac{1}{60}$ or $\frac{1}{45}$ of a grain of strychnine rapidly removed craving, anxiety, irritability, agoraphobia, and other premonitory symptoms of a threatening dipsomaniac attack. The patient each time rapidly improved in all regards, and felt desire for work and society. In another patient, dipsomania disappeared under the internal administration of strychnine, the alkaloid being given for the first two weeks in doses of $\frac{1}{30}$ of a grain, and for another two weeks in that of $\frac{1}{60}$, twice a day, in pills. —*British Medical Journal*, May 1, 1886.

EFFECT OF MENTAL OVERWORK UPON THE TEETH.—Among the hard-worked pupils of the Paris public schools, the teeth become deteriorated in a few weeks after entry. The second dentition is often premature. These observations confirm the statements of Dr. J. L. Williams, who has given great attention to this subject. He has shown that any mental strain shows itself upon the teeth in a short time, both in increased decay, as well as in increased sensibility of the dentine. Dr. D. M. Parker has reported that these same changes are always apparent in men who are in training for athletic trials. As there is not the slightest doubt of the accuracy of these observations, they show that these are matters which demand serious consideration from educators.—*Boston Medical and Surgical Journal*, June 3, 1886.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JULY 3, 1886.

COLD WATER ENEMATA IN CATARRHAL JAUNDICE.

As the subject of the treatment of catarrhal jaundice by enemata of cold water has been under discussion during the past few weeks in some of our contemporaries, it seems proper to call attention to a paper on "Epidemic Jaundice among Children," read by DR. A. Y. P. GARNETT, of Washington, at the meeting of the American Medical Association in Cleveland, in 1883. This paper was based on a number of cases treated by Dr. Garnett during an epidemic of acute jaundice in Washington in the summer of 1881, the epidemic being almost exclusively confined to children under 6 years of age.

Epidemic jaundice among children is of very exceptional occurrence. Von Scheuppel mentions, in his article in Ziemssen's Cyclopædia, only one such epidemic, which was reported by Rhea, and Legg mentions only two—one in Essen, in 1772, reported by Brüning, and one in 1870, at Hanau, reported by Rehm—while from 1742 to 1872 fifty-six epidemics are reported among adults. Sir Thomas Watson mentions an epidemic which only affected young girls, and different writers mentions epidemics which affected men only.

The use of cold water enemata in catarrhal jaundice was first proposed by Krull (in the *Berliner Klinische Wochenschrift*, 1877, p. 159). His method is to inject from two to four pints of water at 60° and this is retained in the rectum as long as possible; the enemata being repeated twice a day if necessary. Dr. Garnett's method of treating his cases differed materially both as to the quantity of water used and as to the frequency of repeating the injections. His cases being children under 6 years of age, it was considered most prudent to use but four ounces of the water at a time, and repeat once every four hours during the day. Löwenthal used one or two quarts at each operation, and repeated but once in twenty-four hours. In Dr. Garnett's opinion the plan of injecting a small quantity of the cold water and repeating it every three or four hours would prove more satisfactory, even in adult cases, than the method pursued by Krull and Löwenthal.

It need scarcely be said, however, that this should not constitute the whole treatment of this affection. An exclusive diet of milk, with lime water, and whipped albumen of egg, and an easily digested meat juice on commencing recovery, is of prime importance. When the temperature is high and the skin dry, the patient should be placed in a bath at 80° or 85°, or may be sponged with water at this temperature. Calomel must be regarded as the most useful drug in the treatment of this affection, and it should be given in small doses. While many prefer to give it alone, rubbed up with white sugar, in doses of one grain every one or two hours, others prefer to administer it in combination with bicarbonate of soda, ipecac, and a very small quantity of powdered opium. For a child 5 years old the quantity of calomel should be about gr. 1-24 to 1-16, with 1-10 each of bicarbonate of soda, and ipecac, and not more than gr. 1-40 of powdered opium; though the soda and ipecac may be given in larger doses. This may be repeated every three or four hours, with the certainty that free evacuations will be obtained. For adults the compound jalap powder is often most useful in causing such a downward pressure as to force out a plug of mucus which is obstructing the duct; but for children this must be regarded as a rather harsh remedy. But for reducing mucous plugs phosphate of soda must be regarded as one of the most efficient of all remedies, and may be given with arsenate of soda. It should be borne in mind that calomel is especially efficient when there is much irritability of the gastro-intestinal mucous membrane, and when given alone or in the combination described above vomiting rarely occurs.

It is also to be borne in mind that as a rule a sick child is almost always thirsty, and that its thirst is not quenched by milk. Nurses, and very many physicians, are too ready to give a sick child milk when it should have water. In the treatment of very many diseases of children the use of alkaline, slightly laxative mineral waters is of great importance. American writers have fallen into the habit of prescribing Ems, Vichy, Carlsbad and other waters which can-

not be readily obtained. The Buffalo Lithia, No. 2, and Bethesda waters of this country may be regarded as much more desirable from any point of view, and for chronic cases, we may add, the Kentucky Blue Lick, which is a sulphurous water. Lemonade is an agreeable drink for adults, but it is undesirable for children, and should never be given to anyone when an alkaline water is being used. Aërated waters and effervescing drinks are not so grateful to children as to adults, at least to children under 5 or 6 years of age, and unless constant nausea demands them they cannot be regarded as having any advantage over plain waters for children of any age. It should be remembered that in very many cases of constant nausea and vomiting the source of trouble may be found in the fact that the stomach is empty or contains a small amount of mucus. This is easily removed by the administration of repeated draughts of warm water, until the stomach is thoroughly cleansed; after which hot water may be given. The Buffalo water, mentioned above, is an exceedingly light water, and is very useful in cases of nausea.

Nitric and nitro-muriatic (Mettauer's) acids are often of great value in the jaundice of adults, but they do not seem to be suited for those cases occurring in children. Finally, may be mentioned Gerhardt's proposition to faradize the gall-bladder, and empty it by compression with the fingers, forcing the bile into the intestines and thus clearing out the obstructions. While it seems to be a dangerous practice even in adults, the successes seem to justify it in those cases.

EXCLUSIVEISM AND SPECIALISM IN MEDICAL ORGANIZATIONS.

That principle or feeling which prompts one man or class of men to assume superiority in some direction over his fellows, and therefore to assert exclusiveness in association, rank or privilege, is probably as old as the human race. In matters of State or politics, it underlies all forms of aristocracy; it prompts the religionist to say to his neighbor "stand thou there, I am holier than thou;" and it does not fail in prompting even men of science to think they have attained an eminence that lifts them so far above all others cultivating the same fields of human knowledge, that they must needs have exclusive social organizations for themselves.

The strong influence of this psychological principle has been well illustrated in the progress of medical organizations in this country. Although every State Medical Society in this country has shown a remarkable disposition to give the fullest opportunity to those cultivating special departments of medical science or practice to present reports or papers regarding their own special departments at any regular meeting; and although the American Medical Association, as fast as new specialties were developed, added new Sections for the accommodation of their votaries, the same spirit of exclusiveism soon prompted each to seek an organization for itself; not for the purpose, as might be supposed, of accommodating *all* practising a certain specialty with more time and freedom of discussion, but directly for the purpose of including in its membership only those who had already gained reputation, that they might on the one hand, avoid the necessity of entering into discussions on a level with the common doctor; and on the other, to more effectually bar the progress of each new competitor in the same field. Hence each new special organization is formed by a few of kindred spirit meeting and selecting those they desire for comrades, inviting them to a subsequent meeting, when a constitution and by-laws are adopted with such provisions that all subsequent additions must be made by the nomination and election of those already members, or even by a small council or committee of censors. Consequently these, so-called, American Ophthalmological, Otological, Gynecological Societies, etc., instead of being composed of all the American ophthalmologists, otologists, etc., who might choose to join them, or a ratio of delegates chosen to represent all, are close corporations to be increased or perpetuated only by the gracious favor of the individual corporators.

The whole process is admirably illustrated by the last so-called National organization just completed, and the proceedings of which we give in the present number of THE JOURNAL under the modest (?) name of "*The* Association of American Physicians." A few months since a dozen or possibly twenty prominent physicians in Philadelphia and New York held a conference and decided to form what was to be called an Association of American Physicians and Pathologists, which it was supposed would complete the circle of special organizations known to the profession. They selected a sufficient number, chiefly from the cities of Philadelphia, New York and Boston, to make seventy-four in all, effected a temporary organization and agreed to hold their first regular meeting in Washington, D. C., June 17, 1886. That meeting was held with the results to be seen in the regular report of the proceedings in the present number of THE JOURNAL. Fifty-six of the seventy-four selected were in attendance. A constitution for permanent organization was adopted, limiting the

number of members of the Association to one hundred and the honorary members to twenty-five; making it necessary that proposed new members must be nominated by two regular members, referred to the Board of Censors and elected at a subsequent meeting, and as a part of the qualifications it is required that the proposed members must have accomplished some scientific or professional work of importance. Another provision fixes the permanent place of meeting in Washington, D. C., the time the month of June each year, and the name of the organization "The Association of American Physicians."

Here are nominally seventy-four, but actually fifty-six presumably eminent members of the profession, forty-two of whom are from the cities of Philadelphia, New York and Boston, forming an association avowedly of so high an order that of the 40,000 American physicians (not counting surgeons and other specialists) only 100 can expect to be members at one time, and carefully guarding the door of entrance for the future, and yet so modest, that they adopt a name directly calculated to create the impression everywhere that this new society is simply an Association of American Physicians and nothing more. Surely this is a serious mistake. There should be something in the name to indicate the distinctively eminent character of the membership. Perhaps the most appropriate title would be "The Association of *Eminent* American Physicians." But if the extraordinarily frequent use of the word "*eminent*" in two or three leading medical journals in New York and Philadelphia and their echoes in Canada and elsewhere, during the past year, has rendered that word too monotonous, then follow the *News* and call it "The Association of American Clinicians and Pathologists," or even "The Association of Medical Experts;" something, at least, that will surely prevent so distinguished a body from being confounded with the great body of American practitioners. We trust when the members come together again next June they will lay aside that modesty so natural to men of true science, and not only correct the present error, but if they meet there in the Capital of the Nation all the other specialist organizations to form a Confederated Congress, do not permit the repetition of a similar mistake by calling it "The Congress of American Physicians and Surgeons," as has been proposed, and which would suggest to all the outside world only a gathering of ordinary members of the profession, but insist boldly on its being called honestly and plainly "The Congress of American Specialists." For it would be a sad reflection if, after assembling annually on the banks of the Potomac and enduring a June sweat for a decade, they found themselves wellnigh forgotten, and all for the want of a title sufficiently distinctive to secure the attention of the learned in all parts of the world. Let no one suppose that the foregoing comments are prompted by any feeling of opposition to the new Association. We are perfectly willing that both specialism and exclusiveism shall have fair play and an open field, but it is no more than right to claim that every ship should sail under its own flag.

A NEW WORK ON RENAL DISEASES.

The want of a good American work on renal diseases has long been felt. The average American physician is not usually an enthusiast in matters of pathology unless there be with it a judicious combination of practical therapeutics. And it may be said that renal diseases are the *bêtes noires* of physicians. Reference to the existing works on the subject will show that the subject seems to be in a sad, if not positively unintelligible tangle; and readers have often turned from the subject in despair, wondering why authors cannot agree, at least in the matter of nomenclature. And this has not been the whole grievance of the reader. He has read pages of partly unintelligible pathology only to find a few lines of the most general treatment—or to find that the treatment advised was contradicted by the pathology just read. But since the appearance of Ralfe's excellent work on "Diseases of the Kidneys, and Urinary Derangements," of Tyson's second edition of his "Practical Examination of Urine," and, lastly, of the work which is named below the physician may, for all practical purposes, discard other works of this character.

"Bright's Disease and Allied Affections of the Kidneys," by DR. CHARLES W. PURDY, of Chicago, is the most recent contribution to the literature of renal diseases. Physicians and pathologists will congratulate themselves and the author that he has published a work in which the anatomical divisions of nephritis, so incorrect and misleading, have been discarded. To those who do not know the author of this work, it will be a sufficient introduction to say that much of his special pathological investigation for this work was done in the Pathological Laboratory of the University of Aberdeen, with the aid of Prof. D. J. Hamilton. With one exception all the illustrations, which are excellent in every respect, are original. If there be any chapters in the book which are more especially worthy of notice, they are the chapters on "Scarlatinal Nephritis," and "Puerperal Nephritis." Scarlatinal nephritis has received more obscure treatment, and less treatment, at the hands

of authors than any other affection dependent upon renal changes, and Dr. Purdy has greatly cleared up the subject. On laying aside the book the reader will only regret that its scope is not greater; but as it is, it may be considered the best work of its kind that has ever been brought out in America.

AMERICAN MEDICAL ASSOCIATION.—All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

SOCIETY PROCEEDINGS.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

First Meeting, held in the Army Medical Museum, Washington, June 17 and 18, 1886.

THURSDAY, JUNE 17.—FIRST DAY.

The meeting was called to order by the PRESIDENT, DR. FRANCIS DELAFIELD, of New York.

The original members of the Association number seventy-five, the majority of whom were present. Of the 75 members 16 are from Philadelphia,[1] 16 from New York, 11 from Boston, 3 from Montreal, 6 from Baltimore, 2 from Washington, 2 from Cincinnati, 2 from St. Louis, 1 from South Carolina, 2 from Chicago, 2 from Albany, N. Y., 2 from U. S. Army, 2 from New Orleans, 1 from Colorado, 1 from Connecticut, 1 from Maine, 1 from Pennsylvania, 1 from Massachusetts, and 2 from New York State.

DR. FRANCIS DELAFIELD then delivered the

PRESIDENT'S ADDRESS.

He said: At the inauguration of a new Medical Association, it would seem proper for the presiding officer to say some words concerning the objects of the Association and the best methods of carrying these objects into effect. It was my intention to do this, but when I considered the character and attainments of those whom I was about to address, such a plan seemed to me unnecessary and even impertinent. We all of us know why we are assembled here to-day. It is because we want an Association in which there will be no medical politics, and no medical ethics; an Association in which no one will care who are the officers and who are not; in which we shall not ask from what part of the country a man comes, but whether he has done good work and will do more; whether he has something to say worth hearing and can say it. We want an Association composed of members, each one of whom is able to contribute something real to the common stock of knowledge; and where he who reads such a contribution, feels sure of a discriminating audience.

We are all busy men, working men, ambitious men. We all like to give instruction and gain reputation, and both of these we can do in the societies already existing, but we also want a society in which we can *learn* something. And this, I take it, is the real object of the enterprise which we inaugurate to-day to form an "Association of Physicians and Pathologists," to which we may come year after year with the well founded hope that at each meeting we shall find something to *learn*.

Without further preface I shall ask your attention to a subject of much practical importance:

CHRONIC CATARRHAL GASTRITIS.

The fact that the lining membrane of the stomach is both a mucous membrane and an organ of digestion does, in a measure, confuse our appreciation of the inflammation of this membrane. We are apt to notice especially the disturbances of digestion and to include all the cases in the general class of gastric dyspepsia. But the lining membrane of the stomach, is in part, a mucous membrane. It is frequently the seat of chronic catarrhal inflammation, and it then behaved as do the other mucous membranes under the same circumstances.

The Lesions.—Whether we consider the cases which are found at autopsy in the hospital dead-house, or the cases seen during life in private practice, it is evident that in the majority of persons, the inflammation goes no further than to affect the function of the mucous glands. They constantly produce a thick tenacious mucus which adheres in a thick layer to the surface of the mucous membrane. Less frequently the mucus is thin fluid and is vomited. With such a change in the mucous glands, the peptic glands may also give evidence of disordered function, but it is important to remember that unimpaired gastric digestion is perfectly compatible with chronic catarrhal gastritis. Anatomically, in such a gastritis, the only changes which we find are an increased quantity of mucus, sometimes congestion of the blood vessels, sometimes pigmentation, an enlargement of the mucous glands, some swelling of the stroma with a little infiltration of pus-cells.

Less frequently we find more advanced changes. The connective tissues between and beneath the mucous and peptic tubules is increased in quantity, and the tubules deformed and destroyed. The stomach may be contracted or dilated. Or without any increase of connective tissue, the walls of the stomach may be relaxed and its cavity dilated.

First among the symptoms, comes pain varying from a mere feeling of oppression or discomfort to the most severe and agonizing pain. Most common is the feeling of uneasiness or discomfort, either following the ingestion of food, or occurring when the stomach is empty. It is not always easy to distinguish this from pain belonging to the small intestine or to the colon. Much worse is the severe pain, due in some cases, to the presence of food in the stomach; a pain which is often followed by vomiting. At first, it only comes on when the stomach contains a considerable quantity of food, but later continuing even after repeated vomiting so long as the smallest fragment is left. A pain so severe, that the unfortunate sufferer has no rest by day or by night, deprives himself of almost all nourishment and finally falls a victim to the opium habit.

[1] One of these is in the U. S. Marine Hospital Service.

Nausea and vomiting are also regular symptoms. The nausea belongs to the early morning hours. The vomiting is most frequently a vomiting of food either in considerable quantities, or vomiting kept up so long as the smallest particle of food is left in the stomach. In other cases, large quantities of brownish fluid, mixed with mucus and food accumulate in the stomach and are vomited from time to time. This is especially the case, when the stomach is dilated. Vomiting of pure mucus is seen in a few cases. Vomiting of blood, usually not in large quantities may occur. Regurgitation of acid fluid in the morning especially belongs to alcoholic gastritis.

Retention and fermentation of the food in the stomach are most common with the dilated stomachs, but are by no means confined to them. They are found often enough in other cases of chronic gastritis. Constipation seems in some cases to depend directly upon the gastritis and will disappear as this improves without the use of any laxatives. In the same way, there are diarrhœas which can be cured by treatment directed to the stomach.

Headache is a symptom. It may follow a variety of types, but perhaps the most common is that which comes on at intervals.

A general loss of health, of which emaciation and loss of muscular strength are the most prominent features, is found with the worst cases of the disease. Inflammation of the tongue and a variety of abnormal sensations referred to the throat, mouth and tongue, belong to sóme of the cases.

The course of the disease is naturally prolonged over many years, and interrupted by periods of improvement. The symptoms come on in attacks, at first not severe, not of long duration, easily relieved in a variety of ways. As the disease continues, each succeeding year marks a greater severity and longer duration of the symptoms. In some of the patients, the disease never advances further than to make them uncomfortable during a part of each year. In others, the general health is disturbed, they are unable to work, and become miserable, chronic invalids. In others, the excessive pain drives them into the morphine habit. In a few cases, the gastritis causes death.

In attempting to establish a satisfactory treatment for chronic gastritis, it is important to state as clearly as possible the problem to be solved. First, we must remember that all patients who suffer from gastric symptoms, do not necessarily have chronic gastritis. Besides those who have functional disturbances of the stomach, or cancer or ulcer of the stomach, we find many others, in whom gastric symptoms are due to diseases or other parts of the body. Anæmia, uterine disease, the neurotic and hysterical condition and constipation often behave in this way. In old people the function of gastric digestion is often impaired simply as a result of old age. To each one of these conditions belongs its appropriate treatment, but it is not the treatment of chronic gastritis.

Still further, we must remember that in many cases of gastritis, paliation of the symptoms is all that we can hope for. This is true of the gastritis associated with heart disease, emphysema, phthisis, cirrhosis, Bright's disease, gout, rheumatism and alcoholism. It is also true of the cases in which the inflammation has gone on to the destruction of the peptic and mucus glands. After excluding all of these there remains a large and important group of cases of chronic catarrhal gastritis, in which we may hope not only to alleviate the symptoms, but to cure the disease.

It is evident from the nature of the disease that any treatment intended not merely to palliate, but to cure must be of long duration, and that it must be repeated from time to time when the inevitable relapses occur. The different plans of treatment which may be adopted are: 1, the curative treatment of climate and mode of life; 2, the regulation of the diet; 3, the administration of drugs, and 4, the use of local applications directly to the inflamed membrane.

I believe climate and mode of life offer the most certain means of curing chronic gastritis. It is unnecessary to lay down rules as to the sort of climate. The two points of importance are, first, the locality selected must be one where the patient can live an out of door life, and second, the patient must live in this climate, either for several years or for a considerable part of each year. Excellent as this method of treatment is, it is evident that it can be carried out only by a limited number of persons. The regulation of the diet is a matter which demands consideration in every case of chronic gastritis. In trying to ascertain the best way of feeding these patients, I have found only one satisfactory method, and that is to feed them experimentally with different articles of food, and then after an interval of several hours, wash out the stomach and see how thoroughly these articles of food, have been digested and removed from the stomach. After pursuing this course for a number of years, I have arrived at the following conclusions:

It is necessary that the patients should be well fed, a starvation diet never answers.

The stomach does not require any rest from the performance of stomach digestion, on the contrary, it is all the better for being called upon to perform its natural function.

The patients' own ideas as to what agrees with them are usually erroneous. They are apt either to starve themselves or to select the least nutritious articles of food.

The use of artificially digested foods, or of substances such as pepsin to assist stomachic digestion, is unnecessary.

The starches, oatmeal, cornmeal, bread, the cereals, the health foods are as a rule, bad. Portions of them remain undigested in the stomach for many hours.

Milk in adults is an uncertain article. It answers very well for some persons, not at all for others.

Meat is usually readily and well digested, but there are occasional exceptions to this rule.

Vegetables and fruits can be eaten, but the varieties must be selected experimentally for each patient.

I do not believe that any case of chronic gastritis is to be cured by diet alone. Even the exclusive milk diet while it often relieves symptoms is, as a rule, only temporary in its effect, so that the patient simply loses a certain amount of time by employing this instead of more efficacious plans of treatment.

The advantageous use of drugs belongs to the earlier stages of chronic gastritis. At that time they often palliate symptoms, and sometimes even seem to cure the inflammation. In the later stages of the disease their use becomes more and more unavailing. Yet the reliable drugs for this purpose are not numerous: The preparations of soda, potash and bismuth, the mineral acids, glycerine, sometimes carbolic acid, sometimes iodoform, sometimes the bitter infusions. If none of these answer, it is hardly worth while to look any further. If we can combine, with the administration of drugs the regulation of the diet and of the mode of life of the patient, then of course, our chances of success are much greater.

The use of local applications made directly to the mucous membrane of the stomach. This I regard as the most efficacious plan of treatment for those patients who are not able to leave home and seek a proper climate, but ask to be relieved without interruption to their ordinary pursuits. The local applications are readily made by the introduction of a soft rubber tube through the oesophagus into the stomach. Liquid applications are the best. They should be made in such quantities as to come thoroughly into contact with the entire surface of the mucous membrane, although the pyloric end of the stomach is the region where the inflammations is principally situated. They should be made at a time long enough after eating for the stomach to be as nearly empty as possible. For many cases warm water alone in considerable quantities is the only local application needed. In some, however, there is an advantage in medicating the water and for this purpose I employ a variety of substances. The alkalies, the mineral acids, bismuth, carbolic acid, the salicylates, iodoform, belladonna, ipecac, gelsemium, may each one be employed according to the particular case.

For the first week it is often necessary to put the patient on a milk diet, and this can be done even with those patients who, under ordinary circumstances, cannot take milk at all. Then after a time, to the milk we add one solid meal composed of meat alone. Next this single meal is increased by the gradual addition of fruits, vegetables, and bread. Then comes the giving of two solid meals a day, instead of one; then three solid meals, and now we get rid of the milk, in part or altogether.

For the first week of this treatment it is wise not to expect any special improvement. Indeed, even a longer time than this may try the perseverance of the physician and the confidence of the patient. Sooner or later, however, the expected improvement begins; the nausea and vomiting cease, the constipation or diarrhœa is improved, the flatulence is no longer troublesome, the headache becomes less frequent, and of more real value than these, the improvement in the general condition of the patient becomes evident. The color, the weight, the appetite, the sleep, the spirits of the patient, all show a change for the better. Of all the symptoms, the pain is the one which is apt to persist the longest.

For two or three months the patient has to be kept under observation, and the applications to the stomach made by the physician. After this the patient is dismissed, but continues the treatment himself, first every other day, then twice a week, then once a week for several months. The regular relapses of the disease are managed in the same way, but are much more quickly relieved.

I have tried thus succinctly to lay before you the characteristics of a common and important disease, and yet a disease which seems to me not to meet the recognition and attention which it demands. If I can secure for the patients who are made miserable by it a more careful and intelligent management than they are now apt to receive, the purpose of this paper will be answered.

The Committee on Permanent Organization reported a

CONSTITUTION AND BY-LAWS,

which after several amendments, were adopted. The main provisions of the constitution are:

That the Association has for its object the advancement of scientific and practical medicine. It shall be known as the "Association of American Physicians," and shall hold its annual meeting in the month of June in the city of Washington, D. C.

That the proceedings shall consist of discussions on subjects of general interest in the departments of medicine and pathology; of original communications and of demonstrations of gross and microscopic preparations, of apparatus, and of instruments.

That there shall be members and honorary members. The number of members shall be limited to one hundred. Physicians of sufficient eminence to merit the distinction may, to a number not exceeding twenty-five, be elected honorary members, and as such shall be entitled to attend all meetings and take part in the proceedings, but not to vote upon business questions.

That nominations for membership shall be signed by two members, be referred to the censors, and be acted upon at the succeeding meeting.

The following nominating committee was then appointed, to report on Friday morning: Drs. James Tyson, A. Brayton Ball, George B. Shattuck, Frank Donaldson, and Hosmer A. Johnson.

DRS. S. WEIR MITCHELL and MORRIS J. LEWIS, of Philadelphia, read a paper on

TENDON-JERK AND MUSCLE-JERK IN DISEASE, ESPECIALLY WITH REFERENCE TO POSTERIOR SCLEROSIS OF THE SPINAL COLUMN.

The investigators believed that by their work had increased the knowledge of the symptomatology of this affection. It was stated that while a muscle or a nerve may be excited by both electrical and mechanical irritation, the former is to be regarded as a ruder agent than mechanical stimulus. In some cases electricity is inapplicable beyond a certain extent. It was held that the knee phenomena were a direct muscular response and not due to reflex action. The most delicate test for determining the condition of the muscle is by striking the stretched tendon. This can be done in various situations, as at the knee, ankle, elbow, and jaw. Every distant muscular exertion, such as winking, if accurately

timed, exaggerates these phenomena. To demonstrate this, the patient should lie down with the knee slightly bent. At the time that the tendon is tapped, or just before, the patient is directed to wink, and it will be noticed that the jerk is much increased. This is more beautifully shown in the act of phonation, the patient being directed to count strongly, bringing the whole chest into play at the time the test is applied. A decided sensation, such as heat, cold, or an injury, will increase the responsive power of the muscle or tendon which has been struck. Both the tendon and the muscle jerk are reinforced by irritation of distant parts. This reinforcement disappears when the muscles are cut off from the spinal centres.

A blow on the muscle causes the muscle-jerk to extend up and down, but not transversely. In some cases of disease this jerk is irregular. In addition to this contraction, the muscles may form a little eminence or mound, which disappears slowly. Late in ataxia this is unusually well marked. It is also observable in some healthy muscles.

The phenomena of reinforcement was attributed to an increase of tone in the muscle as a result of the distant irritation.

A tabular statement was then presented giving the results of observation in twenty-three cases of locomotor ataxia. In this table the various symptoms and signs presented were represented by signs. In this way the history of each case could be seen at a glance.

In selecting a decisive symptom by which to arrange the cases into classes, station, or the ability to stand, was selected. This can be accurately estimated by having the wall back of the patient ruled in inches. The examiner takes his place in front of the patient and directs the patient to keep his eye on a particular spot above the head of the observer. It is then noted how much he varies laterally with his eyes open. He is then turned so that the anterior posterior sway may be noted. The examination is then made while the patient has his eyes closed. Numerous examinations made by Dr. Guy Hinsdale show that the normal man does not sway over one-half inch laterally, and not over three-fourths of an inch in the antèrior posterior direction. The normal man sways forwards first, and first to the right. When the sway is more than three-fourths of an inch in the lateral direction, or more than one inch in the antero-posterior direction, the case should be looked upon with suspicion, as indicating that the general health is disturbed, or that there is some disease interfering with the maintenance of the equilibrium. The cases were divided into four classes. 1. Those in which station was normal. 2. Those in which it was slightly impaired. 3. Those in which it was greatly impaired, and 4. The paralytic cases. In the cases examined the knee and ankle jerks and their reinforcement were absent at the time when the cases came under observation. The changes in the arm jerk seem to advance in the same way as the leg jerks, although they come on later. In the paralytic stage the muscle jerk is increased, although the reinforcement is absent. In the first stage of locomotor ataxia the tendon jerk is diminished or absent, while the reinforcement is fair. In the subsequent stages both the tendon jerk and its reinforcement are absent. The muscle jerk and its reinforcement continue normal through the first two stages. In the third stage, while the muscle jerk is normal, the reinforcement is absent. In the fourth stage the muscle jerk is increased while the reinforcement is absent. In the fifth stage the muscle jerk is diminished and the reinforcement is absent. In the sixth stage both the muscular jerk and the reinforcement are absent. The increase of the muscle jerk late in the disease may be due to some irritative changes in the muscle, but this has not been positively determined.

In regard to associated movements, in a certain proportion of cases, if the patient is directed to shut his right hand, the left hand will also shut to a certain extent, and if the patient is sitting down, the leg may be drawn up. This condition may become more marked as the ataxic condition has increased. Another symptom referred to, and which was considered a new symptom, was prominence of the eyeballs. While the condition is not as marked as in exophthalmic goitre, it is sufficiently distinct to be apparent if attention has been called to the matter.

Dr. E. C. Seguin, of New York, suggested another possible explanation for the phenomena of reinforcement: that when the patient performs some movement, or when his attention is attracted by excitation of a sensory nerve, the cerebral inhibitory influence over the spinal cord is momentarily reduced and the reflex powers are raised for the moment. The reinforcement seems to be rather a negative condition.

Dr. James J. Putnam, of Boston, agreed with Dr. Seguin as to the possible explanation of the phenomenon of reinforcement. It seemed to him a mere matter of words whether we consider this due to withdrawal of influence from above or to an increase in the tonus of the muscle.

Dr. H. C. Wood, of Philadelphia, thought that this was more than a matter of words. The explanation of the knee jerk is based on physiological ideas. There are three classes of movements: the voluntary, the reflex, and movements originating in the muscle or in the nerve-endings in the muscle. Until the fact that the time of the knee jerk is so different from the time of the other reflexes is explained, we must admit that we have these three classes of movements. While it is possible that the movements in the muscle are the result of inhibition, we have at present no proof that such is the case.

Dr. F. Peyre Porcher, of Charleston, S. C., read a paper on

TYPHOID FEVER.

The author described a method of treatment which he considered very satisfactory. As in all cases of high temperature there is costiveness, the result of the arrest of the intestinal secretions, he recommended a mild laxative at the beginning of the treatment. Any laxative may be employed. The following combination is useful:

℞. Rhei pulv. ..... gr. ii–iv.
Magnesiæ ..... gr. x.
Hydrarg. chloridi mite. ..... gr. ss.–ii.

Sodii carbonatis..... gr. iv.
Pulv. ipecac..... gr. ¼.
M. Et. ft. pulv. No. 1.
Sig. One powder every four or five hours as required.

In the treatment of typhoid fever, three things are to be considered: the necessity for maintaining the strength of the patient, the support of the system by the use of stimulants, and the morbid effect of high temperature. Special attention was directed to the latter element of the treatment. In reducing the temperature, the speaker had resorted to the use of ice-cold water, which was applied to the head, hands and arms by the use of towels wrung out of the water and reapplied as frequently as necessary. The applications are continued for ten to fifteen minutes, until the heat of the skin is reduced. The use of baths was considered objectionable on account of the difficulty of their application, and on account of the prejudice against them. He prescribes for internal use a fever mixture prepared somewhat as follows:

℞. Potassii acetatis..... ℥i.
Liquor amonii acetatis..... ℥i.
Spr. ætheris nitrosi..... ℥ss.
Tinct. aconiti..... ℥ss.
Aquæ ad..... ℥iv.
Sig. A dessertspoonful in a little water every two hours so long as the fever continues.

Morphia or the bromides may be added to the above preparation. It may also be employed in other fevers. Hot pediluvia may also be employed. In malarial cases, quinia and arsenic are employed. Later the mineral acids are added. With reference to the use of stimulants, these may be continued as long as the tongue is dry. Oil of turpentine is often called for on account of tympanitic distension of the abdomen. It is also of value as an astringent and as a general stimulant. The speaker had treated thirty cases in private practice in this manner. Three died. In these cases there were causes sufficient to explain the fatal termination.

DR. JAMES TYSON, of Philadelphia, described a case under his observation, in which, to reduce the temperature, he wrapped the patient in a sheet which was kept constantly wet with ice water. This was entirely successful. In this case both antipyrine and thallin were employed, but although they promptly reduced the temperature, it soon returned to its original position. When it is necessary to keep the temperature continuously reduced, he considered some modification of the cold pack is the best method.

DR. JAMES T. WHITTAKER, of Cincinnati, remarked that we should not lose sight of the possibility that the high temperature may be nature's way of getting rid of the poison. It has been found that the virulence of the typhoid fever bacillus can be reduced by heat. It is also possible that the changes formerly attributed to heat may be due to bacilli.

DR. E. DARWIN HUDSON, of New York, said that when he assumed his duties at the Bellevue Hospital, he found a simple and successful plan of treating typhoid fever in vogue. He was confident that under that treatment the successes among the poor pauper class of patients in that institution are greater than among the private practice of many physicians. The treatment is almost negative, consisting in sponging the patient every two hours during the continuance of the temperature above 102.5°, and adherence to an absolute milk diet. The only other measures employed are those directed to the relief of special symptoms occurring in the course of the disease.

DR. SAMUEL C. CHEW, of Baltimore, had employed with success quinia by hypodermic injection in order to reduce the temperature. It seems to have almost a specific action when used in this way. He used a solution of the hydrobromate, in which 20 minims represented 4 grains of the drug.

DR. WILLIAM H. DRAPER, of New York, remarked that there is perhaps nothing more fallacious than statistics in typhoid fever. Cases of fever not truly typhoid are confounded with typhoid fever. All have seen cases in which there was a continued fever, but in which the temperature did not run the typical course. In such cases, we have no evidence that they are cases of typhoid fever. Experience shows that the value of antipyretic treatment in typhoid fever may be readily overestimated. In the majority of cases the value of antipyretics is not so much in reducing the mortality, as in affording comfort to the patient. That it does this, no one can doubt. The mortality of typhoid fever in the majority of cases depends upon conditions over which a reduction of the temperature would have no influence.

DR. WILLIAM PEPPER, of Philadelphia, said that we have statistics showing the normal course of typhoid fever, which would make us slow to accept a mortality of 15 or even 10 per cent. as evidence of much success. He thought it doubtful if the normal mortality would be over 15 per cent. under good nursing. Successes vary. He had treated a series of 104 cases without a single death, and again had treated twenty cases and lost five. It is evident that in typhoid fever we have different sorts of fevers, and a remedy applicable to one set of cases may not be to another. An excellent rate of mortality may be secured by absolute rest from the first moment of suspicion, and a rigid diet of milk, or milk diluted. In addition he believed that the abstraction of heat is of great value. He thought that some remedy directed to the constant and important lesion of typhoid fever, aids in reducing the temperature. His own preference is for the salts of silver. If the case comes under observation early, is put at absolute rest, receives proper treatment, the mortality should not exceed 5 or 6 per cent. In private practice he believes that it can be kept down to this.

AFTERNOON SESSION.

The first business of the afternoon was the discussion of the question,

DOES THE PRESENT STATE OF KNOWLEDGE JUSTIFY A CLINICAL AND PATHOLOGICAL CORRELATION OF RHEUMATISM, GOUT, DIABETES AND CHRONIC BRIGHT'S DISEASE?

Referee, DR. JAMES TYSON, of Philadelphia.

Co-Referee, DR. WILLIAM H. DRAPER, of New York.

DR. TYSON, the *Referee*, began by defining the dis-

eases included in the subject. The usual definitions of rheumatism and gout as general diseases with local expressions were given. Diabetes was subdivided into two varieties—the milder and the more severe form. The former consists essentially in a defect in that particular metabolic office of the liver by which glucose is converted into glycogen. It is due to over-stimulation of the liver cells by the excess of absorbed glucose arising from the habitual over-use of saccharine and starchy foods. The more severe form of diabetes may be termed neurogenous, and is caused by some direct or reflex influence on the vaso-motor centre, whence arises a hyperæmia and accelerated circulation through the liver, as the result of which the glucose absorbed during intestinal digestion is carried too rapidly through the liver to permit its conversion into glycogen. To this is added, in advanced stages, glycogen resulting from the splitting up of the products of digestion of nitrogenous foods.

Taking up the discussion, first as to rheumatism and gout, the referee called attention first to the difference in the morbid anatomy of the two diseases, in the absence of anything specific or peculiar in the changes in the joints in rheumatism, while in gout there is the peculiar deposit of sodium urate in the joints or their vicinity. The composition of the blood is definitely altered in gout by the almost constant presence of an excess of uric acid in combination with sodium, whereas no change of corresponding importance is found in the blood of rheumatism. Heredity plays a much more important *rôle* in gout than in rheumatism, reaching, in the former, according to various observers, 50 to 100 per cent., while in rheumatism the maximum claimed is 34 per cent. The early age at which rheumatism presents itself as compared with gout implies a difference in the etiology, as does also the absence of renal and the presence of cardiac complications. Alcoholic liquors and over-indulgence in food have no influence in the causation of articular rheumatism. In gout they are all-powerful.

The exciting cause of rheumatism is always cold, dampness, or both. The cause of the explosion or the acute attack of gout is the cause of the disease itself, and is due either to the over-accumulation of uric acid in the blood, whether as the result of increased formation or defective elimination, or to diminished power of resistance of the organism through some accidental cause, atmospheric or physical.

Moreover, except in the case of salicylic acid, which is admitted by all to be useful in both affections, Dr. Tyson thought that the treatment required by the two diseases was different. The treatment of gout is eliminative, that of rheumatism is restorative. It is true salicylic acid is efficient in both diseases, but this is not sufficient proof that they are the result of the same cause, so long as that cause is so easily demonstrated in one and not in the other. Nor is the case strengthened by the theoretical reasoning which so well explains the action of salicylic acid—that it prevents the formation of uric acid in the blood by seizing upon the glycocine out of which uric acid is formed.

The relation of gout to that form of chronic renal disease known as chronic interstitial nephritis is a true correlation, since there is every reason to believe that the cause of gout is one of the causes of this form of chronic renal disease, so common in gout, and the evidence of renal disease is often found long before the gout manifests itself.

To estimate the relation between gout and diabetes it is necessary to remember that there are the two forms referred to With neither of them is there any pathological relation. Between gout and the first or mild form of diabetes there is a clinical correlation, although many of the facts on which it has been founded the referee believed to be erroneous. Thus, although uric acid sediments are quite common in diabetes, yet careful quantitative analysis shows no increase in the amount of uric acid excreted. The uric acid sediments must therefore be the result of the excessive acidity so characteristic of diabetic urines, due to the fermentative processes.

Again, it is said the lithæmic urines often contain sugar. This he was confident was much rarer than is commonly supposed, because of the fact that uric acid reduces the salts of copper, and this reaction is mistaken for that of sugar. He thought that the inability of gouty persons to digest saccharine and starchy elements of food should not be regarded as a proof of clinical correlation, because it simply indicates a feeble converting power of the intestinal digestive fluids over the carbohydrates. In diabetes there is no defect of this kind. The carbohydrates are converted into glucose with facility. The trouble is with the liver, which is not able to reconvert the glucose into glycogen.

Between gout and the more severe form of diabetes, which is the result of disease at a point distant from the liver, there is no correlation either clinical or pathological.

Between diabetes and Bright's disease there is a relation of this kind. The effect of the circulation through the kidneys, surcharged with sugar alone, or with sugar, acetone and diacetic acid, is to irritate the renal cells and produce a degree of chronic parenchymatous nephritis instead of the interstitial nephritis which is so closely correlated with gout. From recent observations there is reason to believe that these changes take place in the kidney earlier than used to be supposed, and that albuminuria appears correspondingly early, either coincidently or in alternation with glycosuria. The difference between the relation of gout to Bright's disease and to the more severe or neurogenic diabetes, is that in the former that which causes the gout causes the Bright's disease, so that there is a true correlation; whereas in neurogenous diabetes, it is a result of the diabetes which causes the renal complication.

As to diabetes and rheumatism, the idea that these two diseases are closely correlated has apparently received substantial support from the results of treatment of the two diseases by salicylic acid. Occasional reports as to the efficiency of salicylic acid in diabetes have acquired additional impulse from views which have recently been promulgated by Latham, who concludes on clinical grounds that there are two

forms of diabetes, one due to neurotic disturbances of the function of the liver, and the other to neurotic disturbances of the functions of muscle. As the result of the latter, glucose is formed in the muscles and passes thence into the circulation. This latter is so closely related to rheumatism that one degree of oxidation develops the *materies morbi* of rheumatism, and another develops glucose. Having shown also by the same reasoning that the administration of salicylic acid arrests the formation of uric acid, lactic acid and glucose, he thus explains the usefulness of salicylic acid in some forms of diabetes, and says that in doses of from 10 to 20 grains three times a day, he has seen it produce marked improvement. More recently, Holden reports the successful treatment of six cases of diabetes with salicylic acid.

The referee, whose experience with salicylic acid in diabetes had not heretofore furnished satisfactory results, had not yet had the opportunity of applying this more recent principle, that it is in the cases with rheumatic pains that it is especially serviceable. He held that until more cases were collected in which this principle of treatment was applied, the question was not ripe for decision. In a single case which had come under his observation in which it was claimed that salicylic acid had been very useful, the sugar had been found increased rather than diminished.

DR. WM. H. DRAPER, the *Co-referee*, said: It is fair to presume that this question would not have been propounded if clinical experience did not suggest it. It certainly is not yet justified by the present state of knowledge in pathology. Although the question is premature from a physiological point of view, it can hardly be regarded as without interest and possibly importance from a clinical standpoint. It is from this latter aspect that my remarks shall be made.

By gout is meant, I take it for granted, not simply the arthritic malady, but a diathesis which manifests itself through more or less well-defined derangements of nutrition, which give rise to a variety of secondary cerebro-spinal irritations and provoke definite structural changes in the blood-vessels, in the connective tissue of the parenchymatous organs and in the nervous system.

By diabetes we are to understand, I suppose, the more common and lesser form of that disease. The term rheumatism is so vague in its ordinary application that it is not easy to exactly comprehend exactly what is meant in this question. It is presumed that it covers acute articular rheumatism and the subacute forms in which the differential diagnosis from subacute gout is so difficult.

The form of Bright's disease is probably the form of chronic diffuse nephritis which is characterized by extreme sclerotic changes in the connective tissues of the kidneys and in the arteries, and by cardiac hypertrophy.

I think that the experience of most clinical observers will justify the statement that gout, rheumatism, diabetes and chronic Bright's disease are frequently associated, sometimes in the same individual history; more frequently in the histories of families. The association of gout and even chronic rheumatism with chronic Bright's disease is very common in the individual, while the association of gout with diabetes or of diabetes with granular kidney, is not common. Chronic rheumatism may exist without even being complicated with gout or diabetes or chronic nephritis, but in families where the association of morbid phenomena can be traced, I think that it will be acknowledged that these diseases are frequently found in more or less marked alliance.

Granting this association, are there any facts to show their correlation? Are they reciprocal, interchangeable affections, transmutations of the same morbid process, and therefore recognizing a common determining cause as yet unknown?

The *first* fact that suggests the idea that they are cognate forms is that of heredity. First as to gout and diabetes. Glycosuria often recognizes a gouty ancestry, the term glycosuria being used to express the lighter form of the disease. In many cases the grave form of diabetes is not traceable to a gouty origin. The speaker had seen many cases leading him to believe that, excluding the cases of diabetes of nervous origin, careful investigation of the family history would reveal the presence of gout in the majority of cases. *Second*, concerning gout and rheumatism the fact of heredity as establishing a connecting link is not so evident, but it has been pointed out that articular rheumatism frequently occurs in the children of gouty parents. The influence of heredity in determining the association of the subacute form of rheumatism and gout cannot be positively decided.

Third, as to the frequent manifestation of heredity in the history of gout and interstitial nephritis, I think that there can be no question. This form of Bright's disease not only occurs as a complication of inherited articular gout, but is often observed in the members of gouty families who have themselves never exhibited any articular lesions. This is especially seen in the female line.

I wish next to call attention to the Association with these diseases of certain common derangements of nutrition. While it cannot be claimed that organic chemistry has as yet done more than formulate the general principles that gout and diabetes are associated with the signs of incomplete metamorphosis of the food elements, it is daily making progress in solving the complex processes by which each atom of carbonaceous and nitrogenous food is finally resolved into carbonic acid and urea. In these two diseases there is a diminished capacity for converting the carbohydrates. The occurrence of sugar in the urine of gouty persons is not infrequent, and of lithic acid deposits in the urine of diabetics is not infrequent.

Gout, diabetes and rheumatism in their treatment by medicines exhibit reciprocal relations. In these various affections the alkaline treatment is used with benefit. It is admitted that the value of the alkaline treatment in acute rheumatism is not sufficiently well established to justify the proposition that the disease is on that ground a correlation of gout. The value of salicyl compounds in the treatment of gout, diabetes and rheumatism suggests the idea that these diseases have something in common, either causal

or concomitant, which the préparations of salicylin antagonize.

The clinical observations which support the idea of a correlation of gout, diabetes, rheumatism and certain definite structural changes in the kidneys and blood-vessels, namely, the frequency of hereditary transmission in the same family and their occasional coexistence in the same individual, the common idiosyncrasy of a diminished capacity for the complete conversion of the carbo-hydrates and finally the common reactions which they exhibit to the same remedies, are of course open to criticism, but they nevertheless excite a reasonable suspicion that these diseases have at least certain common features which in all probability proceed from similar derangements of physiological functions.

This much it seems to me may be acknowledged even in the absence of any pathological evidence that these diseases are attended with any common structural lesions or specific functional disturbances. There are many unsolved problems in the pathology of gout, diabetes, and rheumatism, and the working hypotheses of the clinical observers in this field are being constantly unsettled by the revelation of the poysiological laboratory. It would seem, therefore, that the only conclusion we are at present justified in making as to the correlation of the diseases in question is this: clinically, they are often associated by hereditary transmission, by coexistence and alteration in the same individual, by presenting similar idiosyncracies in regard to the power of converting the carbo-hydrates and by being more or less successfully controlled by the same remedies; pathologically, they must still be regarded, in the absence of any demonstrable common determining cause, either functional or structural, as more or less distinct and specific diseases.

Dr. J. T. Dana, of Portland, Maine, said that it seemed to him that this discussion might properly have been extended a little so as to include rheumatoid arthritis. In this affection he thought that the differentiation of it from the other affections has been well made out. He asked if this disease did not require correlation with the others considered?

Dr. E. G. Janeway said that in considering the question of history we have to be careful in reading English writers. The English people all through are gouty. Any rheumatic tendency except in such individuals will not hold in other countries. We do not find the same correlation in America. His observation led him to believe that while members of the Hebrew race are very subject to diabetes, they do not have gout and rheumatism in the same proportion. With reference to the presence of albumen in the urine of diabetics, he had found that in many cases this was to be explained by the irritation of the urinary passages by the saccharine urine.

Dr. A. L. Loomis, of New York, held that from a pathological standpoint we can not at present regard these diseases as directly, at least, correlated, yet from a clinical standpoint there are many things which make it difficult for us to divest ourselves of the idea that there is a correlation in rheumatism, gout, diabetes, and chronic Bright's disease. These clinical phenomena are often so striking that one comes almost to regard these diseases as different manifestations of the same causes. He related the histories of some cases illustrating this point. The first was the case of a man of 63, who at the age of 42 had his first attack of gout. The urine was frequently examined at this period, and with negative results, presenting only a high specific gravity and nearly always an abundance of urates. In his 60th year, after a prolonged attack of gout, sugar appeared in the urine. From that time to the present he has not had an attack of gout. Sugar was presented until six months ago, when it disappeared, and now albumen is present. This change could not be accounted for by changes in habits or in diet. Two analogous cases were also reported. These cases are not unusual. It seemed to him that they compel us to take the position that while in their clinical phenomena they differ very markedly, still in their origin and development they seem to have many things in common; in other words, their correlation seems to be complete.

Dr. H. C. Wood had been led to conclude by his experience that gout and rheumatism were the same thing. He was unable to make the diagnosis between them. In the family of which he was a member the great grandfather was an Englishman and died of gout. The grandparents seem to have escaped, but the uncles and aunts almost without exception have died of gout. One brother has suffered with attacks of sub-acute rheumatism since the age of ten. Another brother has had six attacks of inflammatory rheumatism in as many years. Another brother went to the age of thirty years without any marked manifestation, when he had a severe attack of gout. Another brother has become almost a permanent cripple from inflammation of the muscles. He concluded it extraordinary if all this rheumatism and gout does not date back to one origin.

Dr. William Pepper said that the clinical evidences of the correlation of these diseases seems to be so great that we cannot safely disregard it. In considering such common diseases, we must of course exclude mere coincidence. Dr. Draper has done well in calling attention to gout as a constitutional affection. If we confined ourselves to the mere anthritic phenomena we should exclude the great proportion of cases of gout as we meet with it in this country, which are perhaps as well included under the head lithæmia as anything else. He agreed with Dr. Janeway in regard to the frequency of diabetes in the Jewish race, but he had also found such persons very subject to lithæmia. In all these cases the importance which a diminution of vital resistance of any particular part plays in the development of the local manifestations, must be remembered.

Dr. Dana has referred to rheumatoid arthritis. This appears to be the form in which the nervous element is most marked. All have seen cases in which rheumatoid arthritis has been preceded by influences acting directly upon the nervous system. When we consider the immense amount of nerve force required in co-ordinating the digestive processes of the stomach, liver and kidneys, and in superintending the

metabolism in the tissues, it seems clear that a depressed condition of the nervous system must play a large part in the production of these affections. In studying cases of these diseases we are usually able to obtain a history of some cause of depression of the nervous system, and this affords a powerful argument in favor of the correlation between these diseases.

In regard to treatment, he could give evidence in favor of the salicylic acid treatment in certain groups of diabetics. These have been cases of the milder type associated with rheumatoid and arthritic phenomena. In one case the diabetes has been apparently cured, the patient having returned. to the use of carbo-hydrates. In this case albumen still persists. The explanation of Dr. Janeway as to the cause of the albuminuria does not hold good in many of these cases. The disappearance of the sugar is not always accompanied by a corresponding decrease in the quantity of albumen.

DR. A. JACOBI, of New York, remarked that there was one form of rheumatism not so well known as the forms described, that is, the rheumatism nodosus sometimes seen in young subjects. This nodus form of rheumatism shows itself by the appearance of small lumps varying from half a dozen to several dozen, appearing not infrequently about the tendons of the fingers. He had seen them about the fascia, particularly of the head. Examination of these lumps show them to be composed of hypertrophied connective tissue.

In regard to the connection between diabetes and gout, there are several forms of diabetes. The form particularly connected with gout is that due to disturbances of the nutritive processes, particularly that of the liver. This is the form in which the salicylates do good. Their action seemed to him to be due to the influence of this drug over the liver in increasing the quantity of bile and in liquefying it. It is therefore a powerful agent in diminishing the tendency to the formation of gall stones. The forms of glycosuria which come and go are usually benefited by salicylate of sodium. This form of diabetes is generally found in anæmic persons, often very fat, and not infrequently among women of the Jewish race.

In reference to Bright's disease, this is quite common at the age of forty or fifty years, when atheroma of the small arteries appears. At that time gout is also common, and the co-existence of the two does not necessarily indicate a common causation.

DR. WM. H. DRAPER, in closing the discussion, said that in the cases of rheumatoid arthritis where a reliable history could be obtained, he had, as a rule, found evidences of a gouty origin, referring to gout in its larger significance. In regard to gout, he was strongly inclined to believe that the presence of uric acid is only an epi-phenomenon, and that its presence in the joints is not absolutely essential to the occurrence of other true gouty lesions. In the diabetes of Jews, he had seen the same association of lithæmic conditions as in other races.

He agreed with Dr. Wood in regard to the difficulties of diagnosis. The practitioner can not always satisfy himself whether he is dealing with gout or rheumatism. The correlation of these diseases is to be made only from a clinical standpoint, and none can fail to recognize the frequent association of these diseases. Whether or not there is at the basis of all of them a similar pathological process is a question which has yet to be determined by pathological chemistry.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Statue of Sir Erasmus Wilson—Death of Dr. Francis Mason and Mr. Wm. White Cooper—Influence of the Mind on the Body—Statistics of Pneumonia—The Hydrophobia Commission.

A bronze statue of the late Sir Erasmus Wilson, erected in the grounds of the Royal Sea Bathing Infirmary, Margate, has been unveiled in the presence of a distinguished assemblage. The statue was erected by Mr. Brock, A.R.A., and was presented to the Infirmary by Sir James Paget on behalf of Lady Wilson. Among those present were Mr. Swinburne, the President of the Royal College of Surgeons, Dr. Oliver Wendell Holmes, Sir Spencer Wells, Sir Travers Lawrence, etc. Sir James Paget, in making the presentation, said no place seemed more appropriate for it than Margate, for close by was the home in which Sir Erasmus spent the later years of his life, planned many of his kind deeds, and in which he died in peace and in fair renown among all men. His studies had made him skilful in discerning external forms of disease, and especially those forms which were characteristic of diseases of the skin. In this branch of practice he soon prospered and made a large fortune. But though he became rich he made his income fairly. He never extorted money, he never grasped at it, he never took it from the poor, neither did he ever pretend to more knowledge than he believed he had. He did not scatter his money broadcast in small sums among the needy. He gave it to charities of which he observed the merit and the need, or to the promotion of that knowledge in which he had been chiefly occupied. He gave £10,000 to the Aberdeen University, a similar amount was given by him in order to have the Egyptian obelisk brought to England; towards the Sea Bathing Infirmary he subscribed £30,000, and during his lifetime he had given away no less a sum than £100,000. The statue was then unveiled amid much cheering. It is a faithful portraiture of Sir Erasmus, who is represented as wearing his Presidential robes.

Two well-known lights of the medical world have been removed by death. In his forty-ninth year Dr. Francis Mason, one of the senior surgeons of St. Thomas's Hospital, for many years associated with the late Sir William Fergurson, author of a work on "Hare-lip and Cleft Palate," and inventor of several surgical instruments; and Mr. William White Cooper, the eminent oculist, Surgeon Oculist in Ordinary to the Queen, whom he had attended for upwards of thirty years, and whose intention to confer a knight-

hood on him was only recently mentioned. Mr. Cooper was ophthalmic surgeon to several important institutions, and besides contributing largely to the literature of ophthalmology, was co-editor of Professor Owen's Hunterian Lectures on Comparative Anatomy.

At the last meeting of the Regent's Park Athenæum Society a paper on "The Influence of the Mind on the Body" was contributed by Dr. Howard Battye. Of all the mysterious processes of the mind he thought fear and faith exerted the greatest influence on the body. Fear predisposed to disease, while the simple exercise of faith had been known to produce wonderful and well authenticated cures. The influence of mesmerism had been quite established, but it was not advisable for medical men to import it into their practice, though the force might with advantage be employed in cases of nervous debility and sleeplessness. So-called hereditary consumption was often excited by nervous apprehension. In the course of the discussion which followed the reading of the paper Dr. Gutteridge, the chairman, said he had known cases of small-pox, scarlatina, and other infectious diseases originating solely through dread of the contagion. In one case a woman contracted small-pox by merely looking through a window at a passer-by who was suffering from the malady. Epidemics always subsided as soon as they could eliminate the element of fear.

A very good suggestion has been made by Mr. S. Yeldham of a plan for administering cod-liver oil to infants. He says: "Let the nurse dip the end of her little finger in the oil and put it into the child's mouth. This may be repeated five or six times in the twenty-four hours. In such small quantities, not only does it never disagree, but the child sucks it off the finger with avidity and evident pleasure. It may be administered in this way to the youngest infant." By this simple and inexpensive expedient, the writer says many infants, who were absolutely starving for want of natural foods, became fat and plump, and happily in an almost incredibly short spaceof time. The oil has the effect of enabling the child to digest other food which it could not retain on its stomach without it.

Dr. Angel Money has published some interesting statistics of pneumonia, with especial reference to the relations of delirium and temperature. The cases from which his deductions are drawn have occurred in University College Hospital during the past twelve years. From the author's investigations he had arrived at the same conclusions as Heinze had previously, viz.: that mere pyrexia had little to do in the production of delirium, but prolonged pyrexia and high transitory fever must exercise some direct and indirect deteriorating influence on the grey matter of the brain and spinal cord, and must therefore predispose to delirium and other signs of exhaustion of nervous matter. Of seventeen available cases, sometimes the delirium coincided with the greatest rise in temperature, rarely it preceded the acme of fever, and most frequently the delirium came on with the fall of temperature. Heinze drew attention to the much greater frequency of delirium or marked mental change in pneumonia of the upper lobe. Taking additional precautions by employing only the cases in which the pneumonia was limited to the upper lobes, Dr. Money's observations confirmed this statement; and he suggested that the influence of a local inflammation on the cervical sympathetic, which controlled the calibre of the cephalic and cerebral vessels, might possibly have something to say in the matter. From an examination of other tables, it seemed clear that the presence or absence of delirium exerted no influence on the mortality. It seemed, however, that the third decade of life, when the temperature went beyond 104°, seemed to be the most fertile in the production of delirium; but it was pointed out that this age and this degree of fever yielded the largest number of cases of pneumonia.

A preliminary meeting of the Royal Commission appointed to report on M. Pasteur's method of preventing the development of hydrophobia in persons bitten by rabid dogs, was held recently at the house of Sir James Paget, in Hanover Square.

G. O. M.

DOMESTIC CORRESPONDENCE

THE ASSOCIATION OF AMERICAN PHYSICIANS.

To the Editor of the Journal:

Dear Sir:—The readers of The Journal will doubtless observe many familiar names in reading the proceedings of the first meeting of "The Association of American Physicians;" some who took an active part with the Original Committee of Seven of the American Medical Association in regard to the International Medical Congress to meet in this country in 1887, and some who took an active part against the Committee when it was enlarged. It may be asked, what means this multiplication of medical associations, and what is the necessity for them? In this case the answer is obvious. In reply I would answer the last question first—that there is apparently no necessity for them; and the reply to the first is, it means a bold and aggressive attack. The animus of this new association is open and apparent, for it is evidently organized ulteriorly in opposition to the American Medical Association, and is intended eventually, with kindred associations—the Surgical, the Gynecological, Laryngological, Ophthalmological, etc., to absorb that Association or destroy it, or its influence for usefulness, framing their organization in such a way as to keep out all who may be obnoxious to it in any way, and constituting *itself* the representative body of the medical profession in the United States. That seems to be the end in view.

But by what right can a hundred medical men or any other special number associate themselves together and call themselves "*The* Association of American Physicians? If they had called it "*An* Association of American Physicians," associated for a specific purpose, and limited to that object, it would not look so badly and no especial criticism or objection could be made against it, though exclusiveism is against the spirit of science and its pursuit. Any

one has a right to be heard in prosecuting any of its branches, and no one can dictate to, or obstruct him in its development and promulgation. Knowledge is too widespread and its votaries are too numerous and universal to be hindered on their way in this period of the nineteenth century. But as this new association places itself before the public I do not hesitate to say that its projection is an insult to the rest of the medical profession in the United States, whose standing in every respect equals its members; and besides this, the character and intentions of this new association show a tendency to form a class relation which is altogether foreign to the intent and meaning of the Government under which we live.

But there is another aspect of the matter which comes home to the heart of every physician who regards the reputation of his country, in at least a practical point of view, as of paramount importance; and that is the strong contrast that will be attempted to be made between this new organization and the American Medical Association in the eyes of the medical world, especially in the eyes of our foreign medical brethren who may favor us with a visit at the International Medical Congress, and those also who decline to do so, because of the assumed distiveness which it proposes to set up. Is the American Medical Association and the medical profession to be degraded by a set of men in its own ranks, in a profession which teaches and has always taught fraternity of feeling, and goodwill towards its fellows? Or do they intend to degrade themselves and their co-workers necessarily by breaking up the profession into little fragments, thereby producing such discord that the way may be opened to let in our enemies to destroy the traditions of medicine handed down to us through so many centuries. Can they be satisfied to sever the chain that has joined the far past with the present, and destroy the line and pathway by which medicine has reached its present eminence? And yet such seems to be the very object in view, and the animus of such organizations.

The day will come when such as seek to destroy the great temple of medicine in such ways—by caprice and whims and spitefulness—will wofully repent it, will abhor themselves sooner or later and be ashamed of their associates who, with themselves, lifted a hand or voice to aid in such nefarious work.

PRACTITIONER.

Washington, D. C., June 24, 1886.

BOOK REVIEWS.

A SYSTEM OF PRACTICAL MEDICINE. By American Authors. Edited by WILLIAM PEPPER. M.D., LL.D., etc. Assisted by LOUIS STARR, M.D., etc. Volume IV. Diseases of the Genito-Urinary and Cutaneous Systems—Medical Ophthalmology and Otology. 34 Illustrations. 8vo., pp. 877. Philadelphia: Lea Brothers & Co. 1886.

The great "System of Medicine," ably edited by Dr. Pepper, and so ably written by his colleagues, is now almost completed; within a short time the fifth and last volume will be before the public. If the fifth volume be as well written as the first four surely the highest expectations of the editor and his colleagues will be more than realized.

The two chapters on "Diseases of the Kidneys" are contributed by Dr. Robert T. Edes, of Boston, and Dr. Francis Delafield, of New York. Dr. James Tyson then contributes two chapters on "Hæmaturia and Hæmatinuria, and on Chyluria." These, with two chapters on "Diseases of the Male Bladder," by Dr. Keyes, and on "Seminal Incontinence," by Dr. S. W. Gross, bring us to the gynecological portion of the volume, which includes chapters on "Displacements of the Uterus," by Dr. E. C. Dudley, of Chicago, "Disorders of the Uterine Functions, including Amenorrhœa, Dysmenorrhœa, and Menorrhagia," by J. C. Reeve, M.D., "Inflammation of the Pelvic Cellular Tissue and Pelvic Peritoneum," by Dr. B. F. Baer, of Philadelphia, "Pelvic Hæmatocele," by Dr. Thomas, "Fibrous Tumors of the Uterus," Sarcoma of the Uterus," and "Carcinoma or Cancer of the Uterus, by Dr. W. H. Byford, "Diseases of the Ovaries and Oviducts," by Dr. Goodell, "Diseases of the Urinary Organs in Women," by Dr. A. J. C. Skene, "Diseases of the Vagina and Vulva," by Dr. Edward W. Jenks, of Detroit, "Disorders of Pregnancy," by DR. W. W. Jaggard, of Chicago, who also contributes the articles on "Functional Disorders in Connection with the Menopause," and "Diseases of the Parenchyma of the Uterus; Metritis and Endometritis, including Leucorrhœa," and "Abortion," by Dr. George J. Engelmann, of St. Louis.

It might seem invidious to select any of the gynecological articles and say that it is the best; but it is particularly noticeable that the articles written by the younger authors are not less readable or valuable than those by writers of wider reputation; and certainly one could not wish better articles than those on "Disorders of Pregnancy," and "Abortion."

"Diseases of the Muscular System" are included in this volume, though more properly belonging to nervous diseases. Under this head are three articles, "Myalgia," by Dr. James C. Wilson, of Philadelphia, "Progressive Muscular Atrophy," by Dr. Tyson, and "Pseudo-hypertrophic Paralysis," by Mary Putnam Jacobi, M.D. The section on "Diseases of the Skin" is written by Dr. Duhring and Dr. Stelwagon, of Philadelphia, that on "Medical Ophthalmology," by Dr. Wm. F. Norris, of Philadelphia, and that on "Medical Otology" by Dr. George Strawbridge, of Philadelphia.

It is a noticeable and somewhat remarkable fact that six of twenty-one contributors to this volume are residents of the West; a fact which seems to show that while some of his *confrères* assert that all the medical talent of the country is confined to Philadelphia (and New York and Boston by courtesy), the Editor of the "American System" does not quite believe it.

A MANUAL OF SURGERY. In Treatises by Various Authors. In three volumes edited by FREDERICK TREVES, F. R. C. S., Surgeon to and Lecturer on Anatomy at the London Hospital. Volume I,

General Surgical Affections, The Blood-vessels, The Nerves, The Skin. Vol. II, The Thorax, The Organs of Digestion, The Genito-Urinary Organs. Vol. III, The Organs of Locomotion and of Special Sense, The Respiratory Passages, The Head, The Spine. Duodecimos, 1866 pages, 213 engravings. Per volume, cloth, $2. Philadelphia: Lea Brothers & Co. 1886. Chicago: A. C. McClurg & Co.

The three volumes of which this Manual is composed are concerned mainly with the clinical, diagnostic, and therapeutic aspects of surgery. The general principles of operative surgery are dealt with, but the technical details of the various procedures are omitted, with the exception of such as concern what may be termed special operations, as tracheotomy, gastrotomy, nephrectomy, ovariotomy and the like. Pathology is discussed only in so far as it directly affects the clinical phases and the intelligent treatment of disease.

The editor of this Manual, though young, has made a name for himself as a surgeon of rare ability, and when one finds connected with his name those of John Chiene, A. J. Pepper, Malcolm Morris, Mansell Moullin, Pearce Gould, Frederick Eve, H. T. Butlin, John Duncan, Jonathan Hutchinson, Herbert W. Page, Greig Smith, Mitchell Banks, Harrison Cripps, Sir William MacCormac, Fourneaux Jordan, and others, he must feel convinced at the outset that though the work may be small it represents the best surgical knowledge of England, and will be a welcome addition to the library of the American surgeon. Each volume is indexed separately.

A Compend of Pharmacy. By F. E. Stewart, M.D., Ph.G., Lecturer on, and Demonstrator of Pharmacology in the Medico-Chirurgical College of Philadelphia, etc., etc. Based upon Prof. Joseph P. Remington's "Text-book of Pharmacy." Sm. 8vo., pp. viii—196. Philadelphia: P. Blakiston, Son & Co. 1886. Chicago: W. T. Keener.

This book is No 11 of the Quiz-compend series, issued by the publisher. It shows evidence of great care in its preparation, and will be of service not only to the student, but to the recent graduate in Pharmacy, and to the physician who has to prepare his own drugs or prescriptions. It contains a list of officinal preparations, and lists of the preparations of the inorganic and organic materia medica, with directions.

MISCELLANEOUS.

Preventive Inoculation in Yellow Fever.—The subject of inoculation for yellow fever, as practised by Dr. Domingos Freire, of Rio de Janeiro, was brought under the Société de Biologie of Paris at its last meeting. M. Rebourgeon communicated the results obtained by himself and Dr. Freire in December, 1885, and January and February, 1886. The weather during these months in Brazil was intensely hot, and yellow fever prevailed severely. Of 3051 subjects inoculated at Rio not one had died, whereas in the same districts and houses 278 non-vaccinated had succumbed to the disease. The number of the inoculated has now reached 6000, and not one of them has been attacked with the fever; and, what is more remarkable, severe cases inoculated in the second stage of the disease had all recovered. In reply to M. Brown-Séquard, M. Rebourgeon said that but few foreigners were inoculated, but yellow fever is at the present time creating great ravages among the Brazilians and mulattoes; the negroes even are being largely attacked, which is a rare occurrence; and the area of the disease was extending inland from the littoral. He explained that some specimens of virus sent two years ago to M. Cornil, and found by him to be worthless, had not been sent by Dr. Freire, but by opponents to his method. He had often inoculated himself, and was so convinced of the efficacy of the attenuated virus that he had frequently offered to undergo inoculation with the yellow fever itself. He presented a specimen of the vaccine to the Society for examination. In reply to M. Maurel, he said that he had met with yellow fever at an altitude of more than 700 metres, and had seen many cases among emancipated negroes, although less than among mulattoes, who were attacked in about the same proportion as the whites. M. Maurel attributed the former immunity of negroes to their vegetable diet, but since emancipation negroes had largely adopted the customs of the whites and consumed more animal food. A commission to study the method of inoculation was appointed, consisting of MM. Brown-Séquard, Cornil, Duval, Bourquelot, and Maurel.—*Lancet*, June 5, 1886.

Mississippi Valley (Formerly Tri-State) Medical Society.—The annual meeting will be held at Quincy, Ill., July 13, 14 and 15, 1886, at 10 A.M. Those in attendance will be returned over the railroads centering in Quincy for one-third fare, on the certificate of the Secretary of the Society; but to secure this reduction each person, on buying his ticket to Quincy, *must take the receipt of the local ticket agent for "full fare" over the roads named on the ticket.*

This is not a delegate society, but admits to membership—simply by registration—all practitioners in good and regular standing who may attend its meetings and wish to affiliate with it. A cordial invitation to be present is extended to all members of the profession.

Joseph Robbins, M.D.,
Chairman Com. of Arrangements.

The International Congress of Psychiatry and Neurology, and Mr. Clark Bell.—At a meeting of "The Society of Medical Jurisprudence and State Medicine, held at the Academy of Medicine, 12 West 31st Street, New York City, April 8th, 1886, the following preamble and resolutions were unanimously adopted:

Whereas: It appears from the minutes of the New York Neurological Society, that Clark Bell, Esq., sent a communication to an officer of that body,

which was submitted to the council of officers of the same body and by them to the Society; and

WHEREAS: The said Clark Bell, Esq., in the aforesaid communication represented that he acted as the American delegate of the International Congress of Psychiatry and Neuro-Pathology, the function of said International Congress of Psychiatry and Neuro-Pathology at Antwerp, being the selection of a proper classification of those disorders collectively designated as insanity; and

WHEREAS: All the European collaborators on this worthy undertaking are experienced alienists of high scientific repute, teachers at Universities or physicians engaged in the special treatment of nervous diseases; and

WHEREAS: The said Clark Bell, Esq., is singularly the only North American represented in the same undertaking; and

WHEREAS: It is highly desirable that the important branch of medical science, known as Psychiatry, which above all others is of common interest to the medical and legal professions, should, on so important an occasion as the international classification of its intricate subject matter, be represented worthily; and

WHEREAS: The said Clark Bell, Esq., is not an alienist, not even a physician; and

WHEREAS: As far as eminent Neurologists, members of our Society, have been able to learn, no body of specialists engaged in the study of nervous diseases has any knowledge of the reasons for the appointment of said Clark Bell, Esq., on the commission of said body, or on what representations it was obtained; therefore, be it

Resolved, That the Corresponding Secretary of the Society of Medical Jurisprudence and State Medicine, be instructed to forward the following, as well as the preamble, to the President and Secretary of the International Congress of Psychiatry and Neurology, as well as the physicians of the Commission empowered to prepare a classification of mental diseases.

Resolved, That the Society of Medical Jurisprudence and State Medicine expresses its surprise that the first time the important subject of the Classification of Insanity becomes the subject of international consideration, a subject which, however, interesting to both lawyers and physicians, is pre-eminently and exclusively a question of medical science, it should have been seen fit to entrust the representation of the entire North America to one who is not a qualified practitioner of medicine; and

Resolved, That the International Congress of Psychiatry and Neuro-Pathology at Antwerp, be respectfully requested to duly weigh the considerations above advanced; inasmuch, as if it be worth the while to have American Medicine represented in the important undertaking referred to, it is worth the while to have it represented by some one or several of those who are pre-eminent as original contributors to that science in whose annals the names of Benjamin Rush, Luther Bell, Isaac Ray, Pliny Earle, and W. W. Godding, are almost household words.

Resolved, That the International Congress of Psychiatry and Neuro-Pathology at Antwerp, be respectfully referred to the American Neurological Association, the New England Medico-Psychological Society, and similar bodies whose history and membership may be referred to with just pride by American physicians as bodies which might be safely depended upon to select worthy representatives in the important undertaking of classifying disorders which are pre-eminently the study of medical men.

FRANK H. HAMILTON, A.M., M.D., L.L.D.,
President of the Society of Medical Jurisprudence and State Medicine.

WM. M. MCLAURY, M.D.,
President of the Board of Trustees of the Society of Medical Jurisprudence and State Medicine.

GEORGE W. WELLS, M.D.,
Recording Secretary of the Society of Medical Jurisprudence and State Medicine.

JEAN F. CHAUVEAU, M.D.,
Corresponding Secretary of the Society of Medical Jurisprudence and State Medicine

INDIANA STATE MEDICAL SOCIETY.—At the recent annual meeting of this Society, the following officers were elected for the ensuing year:

President, G. W. H. Kemper, M.D., of Muncie.
Vice-President, W. V. Wiles, M.D., Spencer.
Secretary, E. S. Elder, M.D., Indianapolis.
Assistant Secretary, J. McLean Moulder, M.D., Kokomo.
Treasurer, C. B. Higgins, M.D., Peru.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 19, 1886, TO JUNE 25, 1886.

Col. Glover Perin, Asst. Surgeon-General U. S. Army, granted leave of absence for one month, with permission to apply for one month's extension. (S. O. 54, Dept. Dak., June 14, 1886.)

Major John Brooke, Surgeon, ordered for duty as Post Surgeon, Ft. McHenry, Baltimore, Md. (S. O. 67, Div. Atlantic, June 23, 1886.)

Major Calvin DeWitt, Surgeon, ordered for duty in Dept. Dakota. (S. O. 142, A. G. O., June 21, 1886.)

Capt. Jno. de B. W. Gardiner, Asst. Surgeon, ordered for duty as Post Surgeon, Newport Bks., Newport, Ky. (S. O. 67, Div. Atlantic, June 23, 1886.)

Capt. Robert J. Gibson, Asst. Surgeon, granted leave of absence for thirty-five days. (S. O. 43, Div. Pacific, June 14, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JUNE 26, 1886.

Beardsley, Grove S., Medical Inspector, detached from the Navy Yard, Norfolk, and ordered to the "Brooklyn."

Bright, G. A., Surgeon, detached from "Brooklyn" and ordered to Navy Yard, Norfolk.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED JUNE 26, 1886.

Sawtelle, H. W., Surgeon, to proceed to Wilmington, Cal., on special duty. June 22, 1886.

Wheeler, W. A., P. A. Surgeon, granted leave of absence for thirty days. June 23, 1886.

Williams, L. L., Asst. Surgeon, to proceed to Buffalo, N. Y., for temporary duty. June 24, 1886.

Norman, Seaton, Asst. Surgeon, to proceed to Cleveland, Ohio, for temporary duty. June 26, 1886.

CORRIGENDUM.

DILATATION IN UTERINE FLEXIONS.—In THE JOURNAL of June 26, p. 271, first column, Dr. H. T. Byford is reported as saying: "I congratulate Dr. Jackson that he has discarded incision and dilatation in treating flexions." Dr. Byford writes us: "The word *dilatation* should read *discision*. I believe in dilatation, and think it one of our most valuable resources for flexure and induration in the neighborhood of the internal os."

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, JULY 10, 1886. No. 2.

UNITED STATES ARMY MEDICAL DEPARTMENT.

ADDRESS
IN DENTAL AND ORAL SURGERY.

Delivered at the Thirty-Seventh Annual Meeting of the American Medical Association.

BY JOHN S. MARSHALL, M.D.,

OF CHICAGO, ILL.

One of the duties of a Chairman of a Section is to examine, sift, and weigh the material that has accumulated during the year in relation to the department of medicine over which he may preside in this Association, and which may have more or less legitimate claims upon the profession as new discoveries, new theories, or improvements in methods of operating, or treatment, and to bring to your notice such of them as are in his judgment of greatest importance. This I have found to be by no means an easy task. My report, however, will be brief.

TRANSPLANTATION OF TEETH.

Let me first call your attention to a matter which has somewhat startled the scientific world, and particularly that portion of it interested in dental and oral surgery, viz.: the discovery made by W. J. Younger, M.D., of San Francisco, California, that teeth can be transplanted into artificial sockets drilled in the jaws, and apparently, made to unite with the surrounding tissues as firmly as though placed there by the natural process of dentition.

The operation of transplanting teeth from the mouth of one individual into the natural alveoli of another was first performed by John Hunter, but it soon fell into disrepute from the annoyances and dangers which so often followed it, among which may be mentioned immediate suppurative inflammation, which prevented the union of the tooth with the alveolus; subsequent alveolar abscess, the result of the putrefaction of the pulp; necrosis of the jaw, and occasionally tetanus.

The revival of this operation, and the introduction of *replanting* teeth as a curative measure for alveolar abscess, under antiseptic precautions, a decade or more ago, viz.: the extirpation of the pulp, the filling of the pulp canal, and the washing of the tooth and alveolus with some one of the antiseptic preparations, has placed it among the successful operations, so far as the immediate annoyances and dangers before mentioned are concerned. But the operation really cannot be called successful even in those cases where firm union has taken place, for in very many of them, sooner or later, resorption of the root occurs similar to if not identical with that phenomenon which takes place in the process of shedding the deciduous teeth, and the tooth becomes loose, and either drops out or has to be extracted. The failures in the operation of transplanting have been variously estimated at from 25 to 50 per cent., but when we take into consideration the fact that very many of the teeth thus treated fail after a year or two of union, the percentage must be very much higher.

Quoting from the *Pacific Medical and Surgical Journal and Western Lancet*, January, 1886, Dr. Younger says: "*But transplantation can be made a success and void of all danger and unpleasant consequences, if only common sense, cleanliness, and ordinary skill and care are taken.* And it is to prove this and unprejudice the scientific mind, and through it the public, and do away with the abomination of false teeth, that he "presents to the profession the results of his experiments and experience in this direction.

"He gained courage to try the operation by reflecting on the experiment of John Hunter, who to test the vitality of the pericementum, planted a tooth in a cock's comb. This tooth attached itself firmly to the crest, and a few months afterwards the cock was killed and microscopical examination showed that a living union had taken place, the blood-vessels of the comb and pericementum having established free communications."

Dr. Younger "also tried the experiment upon a cock's comb, to further and personally assure himself of the truth of this statement, and confirmed, as far as attachment was concerned, the experiment of the great surgeon. But in his experiment, he took the precaution of removing the pulp and filling the pulp chamber and root canal with a preparation of gutta percha much used by dentists for temporary fillings. This was in order to avoid any trouble from a decomposing pulp. The tooth was then well cleansed with warm water and dipped in a disinfecting solution.

"The success of this experiment satisfied him that the pericementum would attach itself to any vascular body, and that if properly planted in a fresh socket it would attach itself and form a living union with the surrounding tissues, without the production of after-pains or other evil consequences.."

The first practical experiment upon the human subject of transplanting a tooth into a natural alveolus performed by Dr. Younger was on January 24, 1881. The tooth was treated in the same manner as that described for transplantation in the comb of the cock: the alveolus was washed out with a disinfecting

solution, the apex of the root trimmed to make it of the desired length, and then pressed into position, and retained by delicate silk ligatures attached to adjoining teeth. At the end of four weeks the ligatures were removed and the tooth found to be firmly attached to the surrounding walls of the alveolus, and at the time of writing his paper, was still doing good service.

Dr. Younger reports "between thirty and forty cases of transplanting into sockets already formed"—natural sockets—with "but two failures;" one due to the neglect of the patient, and one to his own inexperience. These are remarkably good results, so far as they go, but a sufficient length of time has not yet elapsed to prove them permanently successful, for resorption of the roots may yet take place and the teeth be lost. This has been the experience of many of the most careful and painstaking operators, and I shall be greatly surprised if in some of Dr. Younger's cases which now appear to be successful, this does not prove to be the final outcome.

Thus far in the experiments of Dr. Younger, he has traveled over the same ground previously traversed by many others of his professional brethren, but from this point he enters a new and entirely unexplored field, and first introduces the novelty of making a garden or nursery of a cock's comb in which he plants freshly extracted teeth, and thus retains their pericemental vitality for an indefinite period, or until such time as a favorable opportunity presents to transplant them into the human mouth. Let me quote him upon this point. He says: "The great and only difficulty I had to contend with was the procurement of teeth at the time they were needed. At last a way suggested itself. I applied to my dental friends for whatever good teeth or roots the exigencies of cases required them to extract. The experiment of Hunter and my own experience had taught me that teeth could be kept alive, indefinitely, in cocks' combs. But could they be transplanted to the human mouth again and made to grow there? I concluded they could, and my first experiment verified my conclusion. On November 28, 1885, a bicuspid that had been in a cock's comb for ten days was transferred to the mouth of a gentleman, where it fastened itself, as if there had been no gallinaceous period in its existence.

"Where he has not been able to procure a suitable tooth, he has taken a root and mounted an artificial crown upon it. Sometimes he used the natural crown of a tooth that had been irretrievably loosened by incrustations of tartar on its roots. In this case he simply saws off the bad root and attaches a good one to its crown by means of one or more gold screws and cement. In these cases the patient simply changes roots. He says: I have also discovered that the pericementum can be kept alive for certainly two days in warm water, temperature 100° to 110° F. He has in two cases transplanted teeth successfully that had been so kept for fifty hours."

He next describes how he was led to the discovery of the fact that teeth can be transplanted into *artificial alveoli* drilled in the bones of the jaws, and made to unite with the surrounding bony tissues and the gum. "His former practice, when he found a root was too long or too wide for the socket, was to cut off from the apical extremity, or shave off from the surface of the root, the necessary quantity to insure a fit; but so often the best portion of the pericementum was in that way removed, that he tried deepening or widening the cavity as the case required, often cutting freely into the bone in order to save all possible of this valuable pericemental tissue. And he found that adhesion took place in this portion as perfectly as in the unbroached. The consideration of this led him to the grand conclusion that artificial sockets could be drilled into bone itself and teeth planted therein as successfully as into the natural cavities."

The first operation of this kind was performed upon a young lady on June 17, 1885, and up to the month of January of the present year he reports having made the operation *seven* times in all. "Four teeth were transplanted in the mouth of one patient, and one each in three others, the original teeth having been lost for periods varying from two to twenty years. All of these are reported as entirely successful, no serious after-trouble following the operation, and the union is perfect with the jaw and the gum."

The first operation, which is a fair sample of all the others, is described as follows: "Miss W., a young lady of 24 years, had lost the left superior lateral incisor, root and all, four years previously, and had been wearing as a substitute an artificial tooth on a rubber plate. The collapse of the gum, consequent on the absorption of the alveolus, was so great, and the exposure of (artificial) gum so much, in conversation, and especially in smiling, that the falsity of the denture was immediately recognized, and was an object of great distress to her. As it was impossible, for the reasons just given, to produce an artificial substitute that would look natural, he determined upon the following operation: Taking a corresponding lateral from the mouth of a young man, which, from its awkward position, was disfiguring his appearance, he prepared it as he does all teeth used in transplantation, viz.: removed the pulp, filled the pulp chamber and root canal with Hill's stopping, and finished the apex with gold. The tooth was then placed in water of the temperature of 100° to 110° F., to cleanse it of all blood and impurities, and allowed to remain about one hour. It was then placed in a bath of bichloride of mercury, 2 parts to 1,000 of water, for about fifteen minutes, to disinfect it. The tooth being now ready, attention was turned to the patient. A hole was cut in the gum a little less than the diameter of the root to be inserted. He then took an ordinary flat, angular-edged drill, and drilled into the bone in the line of direction the tooth was to occupy. When fully deep enough, the cavity was widened and the socket formed with a cone-shaped burr. When it was found by trial that the cavity would receive the tooth perfectly, it was carefully washed and sponged, in order to remove every particle of detached bone, first with warm water, then with cold, and lastly with the bichloride solution already referred to, and when the bleeding had ceased, the tooth was introduced and kept in position by delicate silk ligatures attached to the central incisor on the right and

the canine on the left. There resulted a little swelling over the root, which remained a few days and then gradually disappeared. An accident occurred to the gum during the development of its socket. Just as the drill touched the surface of the bone, the young lady suddenly moved her head, which caused the instrument to slip forward and through the gum, making a triangular-shaped gash of fully an eighth of an inch in length. Before the tooth was inserted, the edges of this wound were brought carefully together and retained in contact by delicate silk sutures. On the fourth day the sutures were removed and no mark was apparent to tell of the lesion that had existed. In twelve days the ligatures were removed from the tooth and it was found to be well attached. About three weeks afterwards, the gum being free from any sign of irritation and the tooth comparatively firm, and as it was desirable to improve the position of the right superior central and lateral, ligatures were passed around the new tooth. This, unfortunately, set up a slight inflammatory action, and an abscess formed a few days after, and a little discharge of pus took place. The ligatures were immediately removed and the abscess treated with injections of iodine. And he says: When last seen the abscess had entirely disappeared, the surrounding gum had resumed its normal appearance, the tooth became firm in its position, and is now performing its functions in common with its fellows as though it had never been a stranger in the mouth." Dr. Younger publishes the names of several medical gentlemen, some of them members of this Association, I believe, and also the names of several dental practitioners known to the profession, who have examined these cases in a critical manner and have expressed themselves as "fully satisfied with the success and utility of this operation."

In an addendum to his paper Dr. Younger offers an explanation of the process of union, which takes place in this class of cases between the tooth and the bone into which it is placed. These views may be briefly summarized as follows: The dental alveolus has no periosteal lining, and the pericemental membrane which covers the root of the tooth—be it a single or double membrane—"has a callus generative energy" only upon that side in contact with the tooth, while the outer surface "has simply the power of forming attachment." To the *endosteum* which lines the cells and interstices of the surrounding bony tissue, he believes belongs the power of forming the alveolus about the tooth, whether the tooth is erupted by the physiological process of dentition, or artificially implanted.

To prove this theory he proposes to commence (for publication) a series of experiments upon rabbits, by drilling into various parts of their osseous tissue, and implanting roots of teeth into these cavities, and then at various intervals to kill the rabbits and make critical microscopical examinations of the existing conditions of the implanted roots and the surrounding bony structure.

Of the immediate success of Dr. Younger's operations there cannot be a shadow of doubt, for the evidence is supported by unimpeachable witnesses. But the permanent success of the operation is not yet assured. It will require a much larger number of operations to establish its practicability, and several years to prove it permanently successful. It is to be feared that the same causes which have operated against the permanent stability and usefulness of so many teeth replanted and transplanted into *natural* alveoli, would operate against those teeth transplanted into artificial sockets, and would therefore advise that we "make haste slowly" in adopting so radical and startling an operation; but I trust these fears may prove entirely unfounded, and that the introduction of this operation may, as Dr. Younger hopes, "do away with the necessity for false teeth, and so add immeasurably to the comfort, beauty and health of the human mouth."

Next let me call your attention to the operation of

SPONGE-GRAFTING IN THE MOUTH.

This subject of sponge-grafting has for the last two or three years been receiving considerable attention by way of experimentation from specialists in dental and oral surgery; but operations in the direction of restoring lost tissue in the mouth by this means, have until lately met with very limited success. During the last year much better results have been obtained, consequent largely upon the improved methods in preparing the sponge, in protecting it against septic influences after being placed in position, and in lessening its liability to become displaced. Much greater difficulties have to be overcome in using the sponge-graft in the mouth than upon the external surfaces of the body. In the latter the usual antiseptic dressings are all that are needed to protect the sponge and wound from the entrance of micro-organisms, and to retain it in position; while in the former no such dressings can be employed, as they immediately become saturated with the oral secretions and fouled by the introduction of food into the mouth. The sponge also needs to be prepared in such a manner as to render it as nearly *permanently* antiseptic as possible, for the reasons just mentioned.

The method generally followed in preparing the sponge for grafting is that introduced by Dr. Edward Borck, of St. Louis, viz.: to remove all the earthy matter that might be contained in the sponge by placing it in dilute hydrochloric acid, and then, after washing it, to render it antiseptic by treating it in iodoform dissolved in sulph. ether, the sponges afterwards to be dried and excluded from the air by being placed in tightly corked bottles. Sponges, however, prepared in this manner, if kept for any length of time shriveled, became soft, and soon disintegrated thus rendering them useless, and making it necessary to prepare a fresh sponge for each case.

To Dr. Wm. H. Atkinson,[1] of New York, belongs the credit of suggesting an improvement in the preparation of the sponges and in the means of retaining the graft in position. He says "choose fine surgeons' sponges, free them from foreign elements," and then place in a "sterilizing solution made by adding one grain of bi-chloride of mercury to one oz. of distilled water," and then raise the temperature to 130° F. and maintain it at that degree for from ten

1 "Transactions American Dental Association," 1885, p. 149.

to thirty minutes. He adds a word of caution in regard to the heating of the sponges, for if the temperature is allowed to go much above 130° the sponge is likely to be spoiled, for albumen begins to coagulate at 133°, and is cooked if it gets beyond 163° to 164°, and is then "not fit to be wrought into tissue." Sponges treated by this method can be kept for an indefinite period if placed in the above sterilizing fluid and excluded from the atmosphere.

The methods which he suggests for protecting sponge-grafts in the mouth from the dangers of being displaced by mastication or in cleansing the teeth, etc., is to form a splint from thin platinum plate, which shall cover the parts and be closely adapted, and at the same time free from pressure over the graft.

The class of operations in which Dr. Atkinson has been most successful, are closing the pus-pockets resulting from pyorrhea alveolaris, the reproduction of lost alveolar and gum tissue, and the healing of chronic alveolar abscesses.

Few operations in the mouth outside of these just mentioned, have yet been attempted, but there is every reason to believe that with care and skill, perforations of the hard and soft palates, the result of surgical operations, injuries, or specific disease may be successfully closed by it, and lost parts in other locations of the mouth and face, more or less completely restored by the same means.

The success of the operation, however, when made in the mouth will depend very largely upon our ability to prevent the contamination of the sponge with septic organisms. This in most cases may be accomplished by frequently and freely washing the parts with peroxide of hydrogen, followed by the bichloride solution, 1 in 1000.

Finally, allow me to direct your attention to the

OPERATION FOR HARE-LIP AND CLEFT PALATE

in early infancy, as performed and strongly advocated by Dr. D. H. Goodwillie, of New York. In these cases there has been a failure of union during interuterine development between the maxillæ and the lateral halves of the lip, and a cleft is the result. In this condition the anatomical relations of the parts are changed, both in form and dimensions. The maxillæ now separated cause an abnormal increase in their dimensions, and when extended forward producing a single or double hare-lip, there is also great distortion of the face.

Dr. Goodwillie's method is to replace the separated and distorted maxillæ and nose to their normal relations by *manual force* repeatedly applied. But in order to accomplish this with the least difficulty, it must be done as soon after birth as the conditions and circumstances surrounding the child will permit, and before ossification has had time to advance. When the bony frame-work has been restored to its anatomical position, then the operation on the cleft lip and soft palate should immediately follow. For the operation of staphylorraphy and uranoplasty the child is etherized and confined in a metallic jacket and head rest. The patient is then placed in a good light, and in such a position that the surgeon standing with the head of the patient against his breast, can, by looking over, command a full view of all parts of the palate. The arms of the operator rest upon the head of the patient and thus enable him to control his movements. The oral speculum is then placed in position and the assistant holds down the tongue by means of a hollow tongue-holder and etherizer combined, through which anæsthesia is maintained during the operation. This is a very great advantage, as it saves valuable time, which is otherwise lost by frequent halts in the operation to reapply the anæsthetic.

The divided uvula is then seized with the forceps, and with the small pointed knife the edges of the cleft are pared from the uvula forward to the anterior point of the cleft. The ligatures are then passed, beginning at the posterior part of the cleft, by means of a hollow needle and holder, armed with silk-worm gut; the point of the ligature is then pushed through the needle and grasped by the forceps and the needle withdrawn. The ends of the ligature are secured temporarily by means of small leaden clamps; this is repeated until the required number are passed. The ligatures are afterwards tied with the fingers, commencing, as a rule, with the posterior one.

If any point appears to be unduly strained by the ligature, a suture-pin clamp is adjusted to relieve the the tension upon the sutures and is allowed to remain until union has taken place. The methods of dividing the levator palati and palato-pharyngeal muscles as those in common practice.

In uranoplasty, the soft tissue covering the hard palate is either lifted from the bone by means of periosteal elevators, or lateral incisions are made through the soft tissue and the bone drilled and split, and afterwards brought together and held in position by ligatures and clamps, which are permitted to remain for from six to twelve days.

To prevent the child from getting the hands to the mouth, leather elbow-pads are strapped upon the arms.

The instruments used for these operations by Dr. Goodwillie are of his own designing, and meet a long-felt want on the part of oral surgeons, and convert an otherwise tedious and disagreeable operation into one of comparatively slight inconvenience.

ORIGINAL ARTICLES.

THE VALUE OF THE KNEE-PHENOMENON IN THE DIAGNOSIS OF DISEASES OF THE NERVOUS SYSTEM.[1]

BY PHILIP ZENNER, A.M., M.D.,

LECTURER ON DISEASES OF THE NERVOUS SYSTEM IN THE MEDICAL COLLEGE OF OHIO, CINCINNATI.

Since the simultaneous publications of Erb[1] and Westphal,[2] in 1875, on this subject, the knee-phenomenon has attracted a great deal of attention on

[1] Read before the Medical Section of the American Medical Association, May 5th, 1886.

[1] Archiv. Psych. und Nervenkrankheiten, V, 792.

[2] Ibid., 803.

the part of the profession, both as to its nature and its clinical significance. Erb termed the phenomenon the patellar-tendon reflex; Westphal the knee-phenomenon; while the English usually speak of it as the knee-jerk. Each of these terms is in common use, signifying alike the contraction of the quadriceps femoris muscle and the forward jerk of the foot, when a sharp blow is struck upon the *ligamentum patellæ*.

The question of the nature of this phenomenon need not detain us long. The views originally expressed by Erb and Westphal still divide the opinions of the profession. Erb believes it to be true reflex action, a peripheral impression being conveyed to the centre in the spinal cord, and thence a motor impulse transmitted to the muscle. Westphal believes that the contraction of the muscle is due to the direct irritation of its fibres, caused by their sudden stretching, the spinal cord having no cognizance of the act. He believes, at the same time, that certain conditions of the muscle and tendon are necessary; that is, a degree of muscular tonus, and a certain tension of the muscle and tendon, as well as a capability of free vibration of the tendon. The muscular tonus is maintained, in a reflex way, by the cord. The phenomenon is, therefore, affected by the condition of the cord, though it is not a true reflex act.

I will not occupy your time by giving the argument *pro* and *con* for either of these views. Neither can be said to be fully established, but that of Westphal appears to find most adherents at the present time. In either case it is true that, for a normal appearance of the phenomenon, a normal condition of the spinal centres and of the nerves emanating from them is necessary. Destruction of the lumbar portion of the cord, or of the nerves leading to or from it, will abolish the phenomenon.

The phenomenon gained its clinical significance when Westphal pointed out, as he did in his first publication, that it could be elicited in health, and that it was always absent in typical cases of locomotor ataxia. Its great diagnostic value is attached to the fact of its early disappearance in this disease, being, probably, often the first sign of disease. The phenomenon may also be abolished in anterior poliomyelitis, affecting the lumbar portion of the cord, and in neuritis, when the nerves issuing from the same part are affected, for in such instances the reflex loop is impaired upon whose integrity the normal manifestation of the phenomenon depends. It is also frequently abolished in cases of diabetes mellitus, and has been found temporarily absent in chronic alcoholism and subsequent to attacks of diphtheria.

Is its absence always of pathological import? The investigations which have been made to determine this question have differed considerably in their results. Berger examined 1409 healthy persons, including 900 soldiers, and failed to elicit the phenomenon in 22, or 1.56 per cent. of the cases. Eulenberg found it absent in 4.8 per cent. of healthy adults examined by him, and in over 5 per cent. of children. Bloch[3] examined 694 school children and found it absent in five of them. While these figures represent the phenomena as absent in a small, but still respectable, number of apparently healthy persons, Pelizaens[4] examined 2403 school children, and though he failed to elicit the phenomenon at first in six, finally succeeded in eliciting it in all but one, in whom it was subsequently obtained by a special manner of examination;[5] and Jendrassik[6] examined 1000 persons, chiefly adults, with no manifest disease of the nervous system, and only failed to elicit the phenomenon in a single person, that being a case of diabetes mellitus.

In view of the considerable difference of the results of these various observers, I have deemed the matter of sufficient importance to institute further examination in this direction, the report of which is embodied in this paper. Not all the persons were examined by myself; many were examined by medical friends at my request, especially the insane cases. For the latter I am indebted to Dr. Richardson, of the Athens Asylum, Drs. Clara M. Ellsbury, Frank B. Wynn, and Crumley, of the Dayton Asylum, Dr. F. W. Harmon, of Longview Asylum, and Dr. O. Everts, of the Cincinnati Sanitarium. But in all instances, excepting those at Athens and two other insane subjects, I examined personally the individuals in whom the phenomenon was said to be absent.

The whole number examined was 2106, of whom all were adults. Of these, 1174 were inmates of insane asylums Of the 932 remaining, 100 were patients in the medical wards of the Cincinnati Hospitals, and the others were, chiefly, men in apparently good health, inmates of the work-house, old men's home, on the police force, etc. All examined were males, excepting 275 women in the Dayton Asylum, who were kindly examined by Dr. Clara M. Ellsbury. Of the 2106 persons the knee-phenomenon was missing in twenty-eight. Five of these had fully developed locomotor ataxia, twelve were still in the earlier stages of the same disease, while in the eleven remaining there were no other symptoms of disease of the cord.

We will speak of the cases of insanity separately, because, as Westphal has shown by the report of some cases with post-mortem examination,[7] the absence of this phenomenon in such cases is in itself strong presumptive evidence of the existence of disease in the posterior column of the cord, and because of the special value of the absence of this phenomenon in diagnosing the form of insanity. I had been of the opinion from previous observations that, in obscure cases of mental disease, the absence of the knee-jerk should direct our attention toward general paralysis, and that it would have some weight in establishing the diagnosis of this disease. This opinion is supported, though not very strongly, by the results of these examinations.

Of the twenty-eight persons with abolished knee-jerk, twenty-three were cases of insanity, and of these ten were cases of general paralysis, two were still doubtful cases, perhaps general paralysis, and eleven had other forms of insanity, mostly dementia of

---

Ibid., XII, 471.

[4] Ibid., XIV, 402.
[5] Neurologishes Centralblatt, 1886, No. 3.
[6] Ibid., 1885, No. 18.
[7] Berlin kl. Woch., 1881, No. 1, and Archiv f. Psych. u. Nervenkrankheiten, xij, 772.

many years' duration. So only about half of the entire number are cases of general paralysis, but when it is considered that at the time there were only a few cases of general paralysis in the asylums beyond the number here included, while there were over 1100 with other forms of insanity, the significance of these figures becomes much greater. Its diagnostic value becomes still greater when another clinical manifestation is considered with it, that is, the condition of the pupils.

In both locomotor ataxia and general paralysis there are often peculiar changes in the pupils, termed the Argyle Robertson phenomenon, or reflectory rigidity; they do not contract when light is thrown into the eyes, but contract during the act of accommodation. Moeli, Thomsen and Siemerling[8] found in 4000 insane persons 492 with rigidity of the pupils, 85 per cent. of whom had general paralysis.

Of my ten cases of general paralysis with absent knee-phenomenon, nine had pupil symptoms; of the two doubtful cases such symptoms were present in one, while they were only present in two of the other eleven patients.

If we can draw any conclusion from such a small number of observations we may safely say that, in an obscure case of mental disease, if the history would not oppose the diagnosis, the absence of the knee-phenomenon is some indication that the disease is general paralysis, and the additional presence of rigidity of the pupils makes such a diagnosis highly probable.

In the 932 non-insane persons there were five with abolished knee-phenomenon. Of these, two had other symptoms of locomotor ataxia; one was an old man of 94, with considerable degeneration of all the tissues, and only two were apparently healthy. One of these was a colored man of 39, who had had a venereal sore, and suffered occasionally with pains about his trunk of an aching character, but had no other symptoms and was apparently in perfect health. The second was a man of 25, who stated that he had never had venereal disease, and was apparently in perfect health. Both were inmates of the work-house. Thus, in 929 persons only two had no knee-phenomenon. It is possible that in these there is some incipient disease of the cord, but whether this be true or not the number is so insignificant that, especially when we compare the results here obtained with those of Jendressik, we may boldly state that the absence of the knee-phenomenon is almost a pathogenic sign of disease, that disease being usually sclerosis of the posterior columns of the cord, locomotor ataxia.

That the phenomenon is sometimes absent in other pathological conditions, scarcely detracts from its diagnostic value, for the other conditions can usually be distinguished. Anterior poliomyelitis can not be confounded with locomotor ataxia. Neuritis is often only a partial manifestation of locomotor ataxia. Diabetes mellitus and alcoholism scarcely need mention in this connection. Diphtheria occurs chiefly in children, where the question of locomotor ataxia scarcely arises; yet it might occasionally, in cases of adults, be a source of confusion, as the knee-phenomenon is sometimes abolished without any diphtheritic paralysis, but it would reappear in time.

It does not appear to me that the phenomenon is as frequently abolished in diabetes mellitus as the results of some observers would lead us to infer. Rosenstein[9] missed it in six of nine cases, and Bouchard[9] in nineteen of sixty-six cases of diabetes mellitus. But I have recently had an opportunity to examine five cases, and found it present in every one of them. In one the phenomenon was very slight, but in this patient the presence of the peculiar lightning pains of locomotor ataxia, a considerable anæsthesia and greatly impaired gait make it very probable that there are structural changes in the cord.

The absence of the knee-phenomenon in chronic alcoholism is probably very rare. I examined 404 men in the work-house, many of whom are hard drinkers. I also examined quite a number of cases at the hospitals. In none of these was the phenomenon absent, although in two, at the Cincinnati Hospital, it was very difficult to elicit. It is said that in such cases the phenomenon is only temporarily abolished, and can be restored by the administration of strychnia, but this remedy has no such effect in locomotor ataxia. I have seen several cases of the latter disease, in consultation, in which strychnia had been administered, the knee-phenomenon, nevertheless, remaining absent.

We may then judge from the foregoing how significant is the absence of the knee-phenomenon, and how much it may aid us in diagnosing incipient locomotor ataxia. But in order that it should possess so much value, that it may not altogether mislead us, our examinations must be made carefully, and the phenomenon not pronounced to be absent when it can really be elicited. I have again and again had persons presented to me with the statement that in them the knee-jerk was absent, where I easily succeeded in eliciting it. Especially has this been true of physicians themselves, and in many instances it was with a sense of relief that they learned that their self-observations had been incorrect. Such errors are so common, and might be so misleading, that it is well to speak somewhat at length of the methods of examination.

The ordinary mode of examination, striking upon the *ligamentum patellæ*, while the subject is sitting with one knee crossed over the other, will suffice in most instances, for usually the phenomenon is easily elicited. But it is sometimes difficult to elicit, either because the subject can not altogether relax his muscles, or from mechanical difficulties, or from no assignable cause. Even in the same individual the phenomenon, while easy to get sometimes, may be very difficult to elicit at others. In such instances the individual should be seated on a table with the legs dangling, and the knee entirely bare, and then the patellæ tendon should be struck upon every part. The best instrument, in my experience, is the inner edge of the hand. In this manner the phenomenon can be elicited in the great majority of healthy persons. Perhaps the failures to be expected are prop-

[8] Berlin. kl. Wochensch., 1886, 37.

[9] Ibid., 1885, 113.

erly represented by Berger's results, who failed to get the phenomenon in $1\frac{5\,6}{1\,0\,0}$ per cent. of his cases.

But Jendrassik has quite recently suggested a method of examination which reduces this relatively large per centage to almost zero. This method enabled him to find the phenomenon in all of 1000 persons except one; it was the means of obtaining the phenomenon in the one child of the 2403 children examined by Pelizaeus, in whom it could not otherwise be obtained, and it enabled me to obtain the results reported in this paper. The method is as follows: The individual, seated as above, is requested to link the bent fingers of one hand into those of the other and pull energetically. During this effort the examiner strikes the patellæ tendon. The effort heightens the muscular tonus, or increases the tension of the muscle and tendon, and makes the knee-jerk more marked. In sixteen of the 1000 examined by Jendrassik he was unable to obtain the phenomenon by the ordinary method, in fifteen of whom he easily obtained it by his own method. In my own examinations I succeeded in quite a number of instances in getting the knee-jerk with Jendrassik's method when I could not do so otherwise. Indeed, so striking was the difference in some instances that it occurred to me that this method might enable us to get the phenomenon in locomotor ataxia. For that reason I again examined a number of cases of that disease in which I had previously pronounced it absent, but in all of them, notwithstanding Jendrassik's method, the phenomenon still remained absent.

Jendrassik states that in his 999 cases he obtained the knee-jerk easily by his method. This was not my own experience. In some instances it was very slight and obtained with difficulty. Whether such a result always has a pathological significance I can not say. In some of these instances the persons examined seemed to be in perfect health; in others there were other manifestations of disease. The latter is especially true of some cases in my case book, and not included in this report, in some of whom there is undoubted locomotor ataxia, in its early stages; in others there is some reason for suspecting the presence of the disease.

Is the knee-jerk always absent in locomotor ataxia? Westphal stated in his earliest publication that it is always absent in typical cases, at least when the disease involves the lumbar portion of the cord. As the disease generally begins in this part, the loss of the phenomenon is usually its first manifestation. Since Westphal's publication, various cases have been reported in which the phenomenon remained present. Hirt[10] recently reported a case in which the phenomenon remained during life, and the post-mortem examination revealed the characteristic changes in the cord; but he was unable to state from the examination of the fresh specimen whether those parts were affected, whose disease Westphal believes to be accountable for the absence of this phenomenon. Westphal[11] has shown in a case of his own that a skin reflex action may sometimes simulate the patellar tendon reflex, and cause us to suppose the latter is present when it is really absent; but he also has reported two cases in which the phenomenon was still present after the ataxia gait was fully developed, and only disappeared in a very late stage of the disease.[12] But such instances are rare, so rare as to very little invalidate the worth of the phenomenon. I have seen quite a number of cases of this disease, and in only one of them was the knee-jerk in its normal condition. This case (which I reported in the *Journal of Mental and Nervous Diseases*, 1884), was not one of typical locomotor ataxia. There was considerable muscular atrophy, and the whole appearance of the case was that of a diffused myelitis, rather than of a systematic disease of the posterior column. In several other cases now under observation the phenomenon can be obtained slightly on one side, but in none of these has the disease advanced to the stage of ataxia.

In conclusion, we may summarize our results by saying that if, in any person, with no other assignable cause, we find an entire absence of the knee-phenomenon, we should look for other symptoms of locomotor ataxia, and if any other symptoms are presented the diagnosis is assured. But before pronouncing it absent the patient should be carefully examined, especially by the aid of Jendrassik's method. In some instances it would even be well to examine several times before pronouncing a final verdict, partly because there is sometimes such difference in the degree of response at different times in the same individual, partly because an unrecognized attack of diphtheria, or the like, may have caused its temporary disappearance.

It was my intention to speak also of the significance of excessive tendon reflexes, but on account of the length the paper has already assumed, I must forego further consideration of the subject.

In addition to those already mentioned in this paper, I am indebted to Dr. Kiely, Physician to the Work-house, Drs. Armstrong, Isham, and Dun, who are at present examining the city police, and Dr. B. F. Clark, Surgeon to the C., H. & D. R. R. Co., for valuable assistance in collecting the material here utilized.

[10] Ibid., 1886, 153.
[11] Archiv. f. Psychiat. u. Nervenk., XII, 798.
[12] Neurologisches Centralblatt, 1886, No. 6.

INTUBATION OF THE LARYNX FOR DIPHTHERITIC CROUP.[1]

BY FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE; PROFESSOR OF DISEASES OF THE THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, CHICAGO.

Some time ago I reported two cases of intubation of the larynx in children less than 3 years of age, both of which proved very satisfactory at first, but both died within two days. Shortly after that report I introduced the laryngeal tube in a child about 5½ years of age, There was immediate relief from dyspnœa; the child expressed herself as thankful that it had been done; the friends and the attending physician (Dr. Creighton) were all much pleased, but the

[1] Presented to the Chicago Medical Society, June 21, 1886.

child sank and died of diphtheritic bronchitis within thirty-six hours.

Recently I have had two more fortunate cases, which have led me to believe that ultimate success may be due largely to the subsequent treatment. *Case IV*, the first of these, J. R., was a little girl 4 years of age, to whom I was called by Dr. E. Garrott on May 26. The child had suffered from a "bad cold" for five or six days, and had been croupy for forty-eight hours. When Dr. Garrott first saw it there was labored respiration, with recession of the chest walls with each inspiration. He sent for me as soon as possible, and we at once decided that intubation or tracheotomy would be necessary. I introduced the laryngeal tube without delay, and shortly afterwards the patient coughed up quite a large piece of false membrane. We directed that the child should be fed on soft solids and that fluids should be withheld as far as possible. We prescribed calomel, which was given in doses of from ½ grain to 1 grain every two or three hours for the next three days.

Whenever any fluid was given it was by the half teaspoonful, and we finally found that this could be swallowed slowly as the child lay on her side without exciting cough. She was allowed all the ice she wished to quench thirst. There was considerable fever for two or three days, the temperature running between 102° and 103° F., but on the fourth day this had nearly disappeared. During this time mucous râles had been abundant over the whole chest. At the end of the fourth day the child triumphantly displayed to her friends the tube which she had just extracted by her own efforts, without cough, remarking that she knew she could get it out. There was no difficulty in breathing subsequently, and at the end of the sixth day the patient appeared perfectly well. In this case expectorants were given beneficially during a part of the treatment, and moderate doses of calomel were given for the first three days. The voice became natural about twenty-four hours after the tube had been expelled.

Case V.—On June 3 I was called by Dr. Lilly to see a little girl, I. D., 4 years 8 months old, suffering from diphtheritic croup. The child had been sick forty hours, having been taken with difficult breathing during the middle of the day. When I first saw her there was great dyspnœa, with lividity of the face and recession of the chest walls; the symptoms indicating speedy death. As Dr. Lilly was obliged to leave the city I was asked to take charge of the case. With the assistance of Dr. E. Ingals I easily introduced the tube, which gave the patient immediate relief. I directed that not more than a half-teaspoonful of fluid be given at any time, and this very seldom. Soft solids were ordered and the child was allowed to suck ice when she wished it to quench thirst. My directions as to fluids were not thoroughly carried out in this case, and to this fact I attribute some of the subsequent trouble; for every time fluids were taken cough was excited, showing that some of it passed into the trachea. I at first prescribed hydrarg. chlor. mite, gr. i every second hour, and a 1-grain tablet of quinine and chocolate every fourth hour.

Twelve hours after the tube had been inserted I found the respiration easy, but the temperature was 104° F. in the axilla. In the evening of the same day, twenty-four hours after the tube had been inserted, I found the patient in a most critical condition. Sonorous and sibilant râles, and that ominous dry tubular respiration which we have often heard after tracheotomy, were to be found all over the chest. The patient was extremely restless, face becoming livid, pulse irregular, rapid and very feeble, respiration imperfect and sighing, urine scanty, and the temperature in the axilla 104⅘° F. Indeed, she presented all the symptoms of the last stage of diphtheritic bronchitis. I have observed such symptoms frequently, but never before have I seen the patient live more than three or four hours after they had become as marked as in this case. In this emergency I ordered respiratory and cardiac stimulants, prescribing tinct. nucis vom. m i, ammon. carb. gr. i, syr. ipecac m xii, and potass. acetate gr. iv, in syr. glycyr., every second hour, to be given alternately with the powders of the mild chloride.

The next morning the breathing was somewhat improved and the temperature 104° F. The pulmonary signs were a little better, but not at all satisfactory. I then discontinued all other medicines and ordered tinct. nucis vom. m i, ammon. carb. gr. i, potass. acetat. gr. iv, and syr. ipecac m xxiii, in syr. glycyrrhizæ, to be taken every hour. The relief obtained from this medicine was very pronounced. During the afternoon of the second day, forty hours after the tube had been inserted, it was coughed out. I saw the child about an hour later and found considerable difficulty in inspiration, with some recession of the chest walls. I could not reintroduce the same tube without using too much force, but I had no difficulty in inserting the next size smaller, which at once relieved the stridor.

In the evening the patient was much better and moist râles could be heard over the whole chest. The next morning the temperature was 101⅖° in the axilla.

On the fourth day after the first intubation the second tube was coughed up, but there was no necessity for its reintroduction. The child talked in a whisper, less distinctly after the tube was expelled than before. From this time on the child improved, though the signs of diphtheritic bronchitis continued. The medicines were gradually withdrawn, though they had to be given again on two or three occasions when the cough became dry.

At the end of a week the bronchi of the left lung had been mostly cleared, and the child appeared to be nearly well. On the thirteenth day I noticed the first improvement in the voice. On the eighteenth day the voice was still weak, and bronchial râles had not entirely disappeared, but otherwise the child appeared perfectly well.

Though in this case there had been no appearance of diphtheritic membrane in the fauces, there was no doubt about the membranous character of the disease; besides, its true nature was partially proven by the fact that the child's little nurse came down with diphtheria during her illness.

These cases illustrate the necessity of great care

in the subsequent treatment after intubation for diphtheritic croup. We must not forget that we have to deal with a serious disease even though the larynx may be kept open. We must not forget the danger from the entrance of food or fluids into the trachea, and we must use every possible precaution to prevent it. If we analyze the reports we find that a very large percentage of the cases of intubation of the larynx have died of pneumonia, and this was undoubtedly due largely to the entrance of foreign substances. I believe that when we attend carefully to the administration or non-administration of food and drinks, and when we promptly meet the indications for expectorants and cardiac and respiratory stimulants, we will be able to save a much larger percentage of cases than shown by the present history of the operation.

The admirable paper just presented by Dr. Waxham shows that the results of this operation even now are quite as good as those of tracheotomy for young children. When we consider the ease with which this operation may be done, its freedom from danger, and its good results, we must consider any one grossly culpable who would allow a child to die from croup without giving it a trial. As parents and friends will readily consent to this operation though they would not to tracheotomy, it will be a means of saving hundreds of lives which would otherwise be sacrificed. When we look over the record and reflect that of the cases already saved by this method probably not 5 per cent would have been saved in other ways, and as we look into the future and see the immense possibilities of this operation, we must not forget our debt of gratitude to Dr. O'Dwyer for his invention, and to Dr. Waxham for his enthusiastic employment of it; but most of all to the profession at large, which tolerates no secret methods, but generously donates to mankind every improvement in the healing art.

64 State Street, Chicago.

THE TREATMENT OF ASIATIC CHOLERA.[1]

BY S. S. TODD, M.D.,

PROFESSOR OF DISEASES OF WOMEN, KANSAS CITY MEDICAL COLLEGE.

Nearly two years ago, in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Vol. III, No. 6), I called attention to a proposed method of treating Asiatic cholera, in which the injection of large volumes of warm distilled water into the areolar tissue, at convenient points and at short intervals, and the use of hot water drinks acidulated with sulphuric acid, were the leading features.

In May of last year, at the annual meeting of the Missouri State Medical Association, when the treatment of this disease was under consideration, I again took occasion to express my confidence in the method, and my growing belief that I had suggested what may at least be deemed a reasonable plan of treatment of the disease in question.

At the time of my first publication I believed the treatment proposed by me to be entirely new; but the publication eliciting comment from various learned sources, drew from Dr. George A. Staples, of Dubuque, Iowa, some information on the subject unknown to me before, and which led to the inference that while my plan of treatment was *mainly* new, it was not *wholly* so.

In the article by Dr. Staples referred to, and which appeared three weeks after my publication, the doctor in a spirit of the utmost kindness shows that in 1883, and again in 1884, Prof. Samuel, of Königsberg, Prussia, published a brochure on "Subcutaneous Infusion as a Method of Treating Cholera," in which he says that during an invasion in 1866 he "repeatedly injected substances into the calves and epigastrium." He does not name the substances used, nor does he give the result. In a subsequent publication in the *Berliner Klinische Wochenschrift*, in 1884, the same writer reiterates his views, which seem to favor subcutaneous medication, and relates a case in the hands of another practitioner, Beigel (*Lancet*, II, No. 13, p. 352), in which, there being "complete collapse," hypodermic injections of warm water to the extent in all, at first, of seven ounces, were made into the calves, thighs, and arms. Some improvement following the measure, Beigel made two further attempts, but the patient finally succumbed.

These publications, which, so far as is known, had never been translated into English, had escaped the observation of the writer up to the time when his publication in THE JOURNAL was made, and he must be excused, therefore, for not having made mention of them. So ill-defined, however, were the ends sought, and so inadequate were the means used in these cases, that the treatment adopted seems to have been almost without purpose and without hope, and certainly without that vigor of execution that is born of strong conviction.

Practically, at least, my claim of having suggested a new method of treating the disease is for the present unchallenged. The hypodermic use of many "substances" has long been practised. The "substance" in the case cited was warm water, given "in all" to the extent of seven ounces only. After this two further attempts were made on the same patient, but the quantity of water used is not stated. It is only said that the patient finally succumbed. *Sed hæc hactenus.* The writer would avoid the imputation of having set up false claims to originality in this respect, and therefore gives the facts as cited by Dr. Staples; but those who have read the paper in No. 6, Vol. III of THE JOURNAL, will readily see, perhaps, that the writer's claim to originality does not need a chronological basis.

In view of the fact that another visitation of cholera may be expected soon, and the great fatality that has hitherto attended the disease under all kinds of treatment, the writer will probably be pardoned if he again urges his views for trial when the opportunity shall come.

I would advise the following plan of treatment to be pursued, with *watchfulness and stern determination: All* cases in their incipiency, and *mild* cases throughout the attack should be treated with opiates

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

and astringents, and *hot* water acidulated with sulphuric acid should be allowed, and urged upon the patient, to the utter exclusion of ice, ice-water, and all ice-cold drinks. The abdomen should be covered with a large mustard poultice and bandaged.

In a more advanced stage of the disease, and in all severe cases from the outset, no time should be wasted with opiates and astringents. They cannot now be of any advantage, and may do a great deal of harm. Collapse is imminent, and the hot drink should be given more assiduously than before, and repeated again and again, if the stomach shall seem to reject it, with the hope of maintaining the normal temperature of the stomach, at least, and assuaging the painful retching. Ice and ice-cold drinks, contraindicated in all stages, are most hurtful in this, and however grateful to the patient, and however eagerly craved, should be rigorously excluded, as tending to cause, or aggravate an already existing algid condition.

It is at this juncture that the physician with only the ordinary resources at command begins to feel his helplessness. "Is there no remedy that repeated trial has not condemned as worthless?" he says to himself, silently and hopelessly. The blood is losing its serum, the patient's voice is growing husky, his mind is growing indifferent, his extremities are growing cold, his skin is growing livid, his blood is growing thicker, capillary circulation is being suspended. The fluidity of the blood must be maintained, or restored, the brain and nerve paresis overcome, or death will speedily ensue.

Now, without having an opportunity of giving the plan a trial, the writer ventures to suggest that the most rational treatment in such a case would be to *flood* the circulatory system with pure water to which a little common table salt has been added—24 grains to 16 ounces of distilled water. To this may be added alcohol, or, what is better, probably, a fluid drachm of tinct. cantharides, for the writer has had ample proof of the virtue of cantharides as a vasomotor stimulant, and as a remedy for the relief of painful muscular contractions in such cases, when given hypodermically. This quantity—a pint, for a single injection, in the adult, less or more according to the stage of the disease and degree of urgency, age of the patient, and amount of serum being lost.

These injections should be begun, if possible, *before sensibility has been much impaired*, and should be made at a point, or points, not distant from the head —points about the chest or neck are best—and the fluid should be injected no faster than it shall be absorbed. This operation may be repeated every hour, or less frequently, according to the demands of the case, for it must not be forgotten that this proceeding is intended to replace the fluid lost by the skin and bowels, and the amount of fluid thus thrown into the circulation is to be determined accordingly.

There is one question of great importance that presents itself—will the fluids thus injected into the subcutaneous areolar tissue be absorbed? This question, if we may judge from the tenor of the comments made on the writer's first publication, is the main obstacle in the way of many to a general acceptance of the proposed practice. Fortunately, it is a question that may be settled speedily and safely when the opportunity offers. That it will be settled affirmatively, the writer does not doubt, from results of like treatment in like adynamic states in several cases of marked gravity.

At the suggestion of the writer Messrs. George Tiemann & Co., 67 Chatham St., New York, have made a syringe especially for this purpose. The instrument has a capacity of four ounces, with three needles of different sizes, and will find ready use in many ways, as for exploratory aspiration, for the emptying of small, deep-seated abscesses, and for the injection of alcohol in large quantities in any adynamic condition.

MEDICAL PROGRESS.

TREPHINING UNDER COCAINE.—At the meeting of the Practitioners' Society, of New York, on May 7, DR C. L. DANA related the following case, the hospital notes having been taken by his house physician, Dr. J. M. Kingman: William H., single, aged 38, born in Ireland, a bricklayer, was admitted to the hospital, February 17, 1886. Examination, February 19: The patient said that his father had had fits. The patient himself had a fit about ten years ago; he fell backward and was unconscious for about twenty minutes. Otherwise he had been a well man until eight months ago. He was then hit on the back of the head by a bar, and remained unconscious for some hours. A day or so later he began to notice difficulty with his speech—a halting and stammering. He also began to notice loss of power in his legs and arms, which has remained about the same.

Dr. Dana decided to trephine the patient. The operation was performed by his late house physician, Dr. Symonds. The patient was a rather weak man, and as Dr. Dana had several times seen epileptic patients get an attack under the influence of ether, he thought it proper to try cocaine instead of ether as an anæsthetic in this case. The head was shaved, and about fifteen minims of a four per cent. solution of cocaine was injected into the skin in the region of the scar which had been left by the blow.

The injection was made deeply, so as to reach the periosteum. Subsequently other injections were made as needed. After the periosteum had been raised and the trephine applied to the bone, no more cocaine was used, as no pain was complained of. About one drachm of the four per cent. solution was employed during the whole operation, which lasted an hour and a half, including the final dressings. At first he employed an incarcerating coil of tubes, applied by the aid of an Esmarch bandage in the way described by Dr. J. W. Wright, but the bandage was so uncomfortable, and finally painful, to the patient, that it had to be removed, and the major part of the operation was performed without any incarcerating coil whatever. The operation, for several reasons, was somewhat prolonged, but the patient endured it without complaint, sitting in a chair with his head resting on his arm on a table in front of him. The incision

was made over the occipital bone on the left side, near the junction of the temporal bone, and three inches to the left of the occipital protuberance. A depressed fracture, linear, and over an inch long, was found. The anterior portion showed some loss of bone-substance, which was replaced by fibrous tissue.

A large button of bone was removed, which showed some depression of the internal table. Pieces of bone were also removed with the forceps.

The exposed dura mater did not appear to be sensitive.

After the operation the patient had one fit the next morning and two others a month later. Since then he had remained free from attacks, though taking the same dose of bromide as before (gr. xlv. daily). His mind was much clearer, his speech greatly improved, and he was able to walk alone, when before the attack he could not walk at all, except with the support of attendants.—*Medical Record*, June 26, 1886.

Aluminium Bronze in Medicine and Dentistry.—Prof. C. Sauer, of Berlin, says in regard to this substance: Aluminium bronze, which I have utilized for the under layer of teeth-plates, is entirely free from injurious oxidation. For this purpose and in teeth-straightening machines, it admits of easier manipulation than gold alloys or silver. I believe, therefore, that it might be of use in the manufacture of surgical instruments. Canulas, sounds, catheters, etc., might be made, and everything that is manufactured from silver. It is an alloy of 900 copper and 100 aluminium. It admits of almost as ready stamping and pressing as pure silver (which next to pure gold, is the softest metal), and it has besides the elasticity of steel. In form of wire, aluminium bronze possesses a power of resisting tension approaching that of steel wire. These characteristics render the aluminium bronze capable of substitution in many cases for silver, and for silver and gold alloys. I have found the melting-point of the aluminium bronze to be higher than that of pure gold, 1000° C. It may, accordingly, be made red-hot without danger of melting, and manipulated with hard solder. I solder it with from 14- to 16-carat red gold, and such solder is more capable of resisting chemical influences than the silver solder, which contains zinc. 10 grms. of aluminium bronze, in the form of a lead plate, are worth 25 pfennige (6 cents), while 10 grms. of 12-carat silver, in the form of a lead plate, are worth 1 mark 50 pfennige (37 cents); 10 grms. 14-carat gold cost 19 marks ($4.75). Aluminium bronze is one-half lighter than 12-carat silver, and almost half the weight of 14 carat gold.

For testing how aluminium bronze is preserved in the mouth, I have employed the galvanic current. Pure aluminium, with other metals, in the presence of a acid or an alkali, yields a galvanic current. Years ago, in experiments with the mouth, I found that in a combination of aluminium with zinc the latter oxidizes. In manufacturing a combination of aluminium with gold alloy or platinum, under such circumstances, the aluminium, on the contrary, decomposes. In two cases in which it was possible for me to weigh pieces of aluminium bronze placed in the mouth, under the influence of a possible galvanic current, and the pieces not being cleaned, and therefore not mechanically worn, after the lapse of four weeks I noticed no loss of weight. For instance, with a piece weighing 16 grms. I have been able to discover only a loss of 0.008, and, besides, after first weighing the piece, a screw was afterwards inserted, so a very slight mechanical loss of weight, therefore, took place. The aluminium bronze oxidizes only superficially in the mouth. There forms upon it a kind of patina, such as is formed in the weighing of plates of 14-, 16-, 18-, and even 20-carat gold. It admits of manufacture into spiral springs, plates, screws, canulas, etc., for surgical purposes. Even knives have been manufactured therefrom. A solution of corrosive sublimate of 1 to 1000 affects it superficially. For its disinfection carbolic acid is to be preferred, as it does not attack the aluminium bronze. Gold aluminium bronze acts similarly, but oxidizes to a greater extent, is softer, and not so elastic, and therefore is to be used as green gold or 20-carat gold is used.—*Therapeutic Gazette*, June 15, 1886.

Visceral Lesion or Disorder, and Mental Disease.—Dr. James Adams says: Disease, or disordered function of internal organs, it is well known, go hand in hand with well pronounced mental disorder. Although it cannot be stated with perfect certainty that these stand to each other in the relation of cause and effect, this much may, at least, be affirmed, that bodily disease or disorder not unfrequently determines the character of delusion, or the form which mental disease assumes.

Thus, the childless wife, past her climacteric, finds, as the effect of an epitheliomatous uterus, the pains which she fondly brings herself to believe are the long-looked, and wished-for, pains of labor; whilst the maniac of persecution, traces in the agonies of pain which he actually undergoes from organic visceral disease, only the cruel influences and machinations of his enemy, or the evil one, upon him.

An interesting case of delusion, stated to be the result of intestinal accumulation, was reported in the *British Medical Journal* of April 10th; a similar case has since come under my own care, a brief report of which may also prove of interest.

My patient, a married lady, is about 50 years of age. She has always been healthy, has had a family, and there is no trace of hereditary tendency to mental disease. The duration of mental unsoundness, when she came under my care, was said to be about three weeks. Its cause was stated to be anxiety in family matters. The mental symptoms had been great melancholy and depression; determined opposition when asked to do any ordinary or rational thing; obstinate refusal of food; constant restlessness; tossing her hair about and tearing it; walking about in her night-clothes; violently refusing to be dressed. She was so violent that she could not be kept in any one position for a moment. She was absolutely incoherent in conversation; had not slept for many nights; and could not be controlled.

On examination, she was found to be violent and

resistive; her hair was in great disorder; she was constantly restless, moved continuously, swaying backwards and forwards from one foot on to the other. Her breath was offensive, and had the odor peculiar to abstinence from food. She was profoundly taciturn, incomprehensive, lost, and bewildered; and absolutely refused all food, nourishment, or even water. It was found necessary, in order to support her strength, at once to administer liquid nourishment by means of the stomach-pump; and this was, of necessity, afterwards repeated three times daily. At the end of a week, all medicines and enemata given having failed to work satisfactorily upon the bowels, and it having been ascertained that the same condition of things had been in existence three or four weeks previously, examination *per rectum* was made, when a dense and hardened mass of scybala was found; it was broken up, and partially removed by means of spoon-handles; and this, followed by a renewed enema of several pints, thoroughly evacuated the lower bowel.

Up to this time, the mental symptoms had continued as they have already been described, notwithstanding also a very large amount of liquid nourishment and stimulants administered mechanically; the tongue had remained dry, coated, parched, and parchment-like; the lips and teeth were similarly coated, the former becoming dry and excoriated. But, very soon after the free evacuation of the bowels, all the worst symptoms began gradually to disappear. Consciousness and comprehension returned, and attempts were made to partake of food and nourishment naturally. These favorable symptoms have steadily gone on since; and now, the third week of treatment of what promised to be a formidable and prolonged attack of melancholia, with stupor, finds the patient calm, coherent, sensible, industrious —with, in short, convalescence perfectly established, and discharge from care imminent.—*British Medical Journal*, May 29, 1886.

COMMENCEMENT OF DROPSY AS A POINT IN DIAGNOSIS.—Apropos of the subject of dropsy, there has seemed to me to be one very good mechanical indication for distinguishing whether dropsical effusion springs from disease of the heart, or from disease of the liver, or the first local seat of the effusion. If dropsical effusion begins in the lower extremities, and proceeds to the abdomen, the evidence is fairly sound that the obstruction is direct from the heart, and that the liver is free, the stagnation and transudation being due to a failure of the return column of blood from the extreme parts. If, on the other hand, the accumulation of fluid begins in the abdomen, and extends to the lower limbs, the evidence is equally good that the arrest of the circulation is in the hepatic system. This distinction may be of moment sometimes in deciding on the question of tapping. In a case where the dropsy occurred first in the extremities, and afterward in the abdomen, it would be good practice to delay the tapping until the effect of removing fluid by puncture of the lower limbs had been carried out. But in a case where the effusion is, primarily, into the peritoneum, and afterward into the extremities, tapping the abdomen would have a prior place to puncture. The rule would run, in cases where there are ascites and anasarca: Tap for primary ascites, puncture for primary anasarca. I refer, of course, in this note to chronic ascites and chronic anasarca uncomplicated; not to special dropsies of local origin, like ovarian cysts, and not to dropsy from renal disease.— *Asclepiad*, April 25, 1886.

FATAL RESULTS FROM "SPLITING THE CERVIX."—Dividing the cervix at the external, or at the internal os, or in the intervening portion, though not long since a comparatively frequent operation for dysmenorrhœa or sterility, is now very rarely done. Most operators now turn to dilators for the treatment of cases where incision was formerly done; one wing of the army of gynecologists still fights under the same banner of mechanical uterine pathology, only in place of hysterotomes, its enthusiastic soldiers use dilators. Possibly it is only a question of time when many of the dilators will be placed in the grave beside the hysterotomes, if the teaching of men like Duncan, Schultze, and Williams prevails, and the mechanical theory of uterine disease is cast aside.

However this may be, we have been somewhat astonished to know of the mortality which Sims had from this operation. Pajot states, in a recent lecture, that he knew of at least four deaths of women upon whom Sims had performed his operation of division of the cervix, and he believes that other similar accidents happened to him. In the light of these facts, the profession is to be congratulated upon the fact that the operation has fallen into disuse.—*Medical News*, June 12, 1886.

TREATMENT OF ACUTE RHEUMATISM.—The last number of *Russkaya Meditsina* contains a communication from DR. L. GRINEVITSKI, of Rostoff-on-the-Don, who writes that for more than twenty years he has treated acute articular rheumatism with nitrate of potash, 2 drachms being given daily in raspberry syrup, and a dose administered every two hours. Together with this internal medication he prescribes an ointment for use morning and evening of the following composition: Olei hyosc., 1 oz.; ung. hydrarg. cinerei, 2 dr.; ext. acon., 1 dr. He has tried all ordinary remedies, and finds that on the whole this plan of treatment is more satisfactory than any other, being especially valuable in those cases where salicylates fail to give relief. Generally the disease is brought to an end in from one to two weeks, according to its severity and the time the treatment was commenced. When commenced at the onset of the attack, and before more than one joint was affected, the others were usually spared altogether.—*Lancet*, May 22, 1886.

TOTAL EXTIRPATION OF THE TONGUE.—DR. R. F. WEIR reports a case of true epithelioma treated by Kocher's method. The whole tongue being involved, it was drawn out and removed at the level of the hyoid bone, after the side of the mouth had been opened under the jaw. Patient was cured twenty-eight days after operation.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JULY 10, 1886.

LAPAROTOMY IN STRANGULATED HERNIA.

Should the abdominal cavity be opened near the site of a strangulated hernia? Or to put the question a little differently, should we perform laparotomy instead of or with herniotomy for a strangulated hernia? Such are the questions which arise on reading the introduction to a paper on "Laparotomy in the Treatment of Strangulated Hernia," in the *Annals of Surgery*, for June, 1886, by MR. C. B. KEETLEY, of London, which may be considered the sequel to some papers, letters and cases in the British journals by MM. Pye-Smith, Fenwick and Neale. Mr. Chavasse states that Mr. Crompton, of Birmingham, opened the abdomen in the linea alba, in 1860, just above the hernial aperture of an umbilical hernia which had been acutely strangulated for seven hours. "His intention was evidently to approach the seat of strangulation from its internal or abdominal aspect. But, finding the gut gangrenous, he desisted and laid the sac open." Thirteen years ago Mr. Annandale, of Edinburgh, wrote a paper on this subject based on a case, in which he said: "The cases which appear to me to be most suitable for this operation are: 1. Umbilical herniæ in the adult, especially if the coverings of the hernia are thin or ulcerated, or the hernia large. 2. Large inguinal or scrotal herniæ which have been recently reducible. 3. Herniæ in other regions in which, owing to special conditions, the usual operation cannot satisfactorily be performed." This operation is, however, only suggested when in those forms of hernia the condition of strangulation or obstruction gives rise to symptoms which absolutely necessitate operative interference, and when signs of gangrene or a history of old standing irreducibility are absent.

The principle of this operation, says Annandale, consists in making a small incision through the abdominal wall and opening the abdominal cavity near the hernia, instead of cutting into the hernial sac itself, or exposing it. One or more fingers are then to be inserted into the abdominal cavity and the protruding structures contained in the hernial sac drawn back from within. He performed this operation in 1878, in a case in which a strangulated right inguinal hernia had been reduced *en masse*. A three inch incision was made in the linea alba, midway between the pubes and the umbilicus. "A portion of the small intestines dilated with gas immediately protruded, and on passing my finger along in a direction towards the right iliac fossa, I felt that the gut was here caught and fixed in some way. This fixed portion was easily drawn toward the wound, and it was then seen to be a small knuckle of gut strangulated by the neck of a hernial sac. This sac was entire, and its neck lay in the general peritoneal cavity, and had the appearance of being somewhat everted toward this cavity. Above the obstructed gut the intestine was dilated; below it, it was contracted and flaccid. Slight and careful traction on the intestine from within, and at the same time gentle pressure with one finger on the neck of the sac in the opposite direction, at once relieved the strangulated portion, and drew it out from the sac." This patient fell a victim to the carelessness of his friends, who allowed him to rise during the night and strain at stool. He died ten hours after the operation.

On reading Mr. Keetley's paper it is evident that the idea with which he performed the operation—which he did in 1883, before he knew of the existence of Mr. Annandale's second paper—was quite different from Mr. Annandale's and other operators, Mr. Keetley's idea being to perform laparotomy as an *aid* not to make laparotomy a *substitute* for herniotomy. Mr. Keetley does open the hernial sac, and assumes it to be opened in speaking of the operation. And Mr. Harry Fenwick published a paper, with a case (*Lancet*, Sept. 26, 1886) under the title "Laparotomy as an Aid to Herniotomy," and speaks very highly of the advisability of the operation for those cases in which the size and condition of the loop of bowel prohibits pressure or forbids prolonged exposure. Mr. Annandale's indications for the operation have already been given: Mr. Keetley summarizes his views as to the indications as follows: 1. When in hernia of any class, a constriction having been divided, very exceptional difficulty is met with in reducing the intestine. This indication more especially has force when hæmorrhage from the notch is persistent or severe. Putting aside this important consid-

eration of the prevention of hæmorrhage into the abdominal cavity, this indication must be one of extreme rarity. 2. When the hernia has been quite recently strangulated and belongs to one of certain classes, namely: (a) congenital hernia in the male; (b) umbilical hernia? In the first class of cases it is to be done as an aid to, and in the second as a substitute for herniotomy. "Under *no circumstances* would I sanction division of the constriction from the abdominal aspect, nor can I imagine how any dilating forceps could be used to stretch the ring without injuring the contents."

Mr. Keetley purposely excludes femoral hernia from the second class, because, having regard to the very dangerous character of that affection, he thinks the surgeon will do the best for his patient by cutting down upon and incising the sac. He has also excluded, but more reluctantly and with some doubts, non-congenital inguinal in the male, and both congenital and non-congenital in the female, "because the completion of herniotomy by excision of the sac, with ligature of its neck, forms so satisfactory an operation in these cases." The reasons for which congenital hernia in the male are included are obvious; all operations of excision and ligaturing in this affection are very dangerous, and usually superfluous as regards a radical cure. "Dangerous as they are, they are not superfluous when a direct herniotomy with incision of constriction, etc., is done, because then they are called for in order to isolate the wound from the abdominal cavity. There is therefore here a strong argument in favor of letting alone the sac of a congenital hernia in the male, and of doing median laparotomy when such a case is seen to be in a state of recent strangulation. The very fact of strangulation in such cases suggests a small hernial aperature and the prospect of success with mild means of obtaining radical cure ultimately." It will be noticed that Mr. Keetley has placed a "?" after umbilical hernia in his classification. This was done with the feeling that the indication for laparotomy in such cases will be very doubtful; and certainly a positive contra-indication may exist. In case of a large sac, evidently containing a large mass of omentum, and with probably a history of irreducibility for months or years, what is to be done? "Should the surgeon be content to perform a small median laparotomy and hook back into the abdominal cavity sufficient of the hernial contents to relieve the strangulation (perhaps a single small knuckle of bowel), leaving the omentum? Or should he set to work in more heroic fashion, reducing the bowel completely, cutting away omentum, sac and superfluous skin, and sewing up the hernial aperture? Keetley did the latter and the patient died; Chavasse did the former, and the patient lived. "But many a patient has been operated on in the latter way and lived, and all the other cases in which had been followed a practice resembling (but it is true not identical with) Chavasse's plan, have perished."

With regard to the technique of the operation Mr. Keetley thinks it of prime importance that the surgeon keep strictly in the median line of the body. The substitution of scissors for the knife after the skin has been divided will avoid waste of time in checking oozing and in securing and tying vessels. The scissors should not be sharp. Near the pubes it may be necessary to divide the pyramidalis from its attachment to the fascia in the middle line. It is not necessary to cut the recti in order to separate them, and it is neither necessary nor desirable to go too near to the pubes—unnecessary because the fleshy parts of the abdominal wall being movable will permit the median aperture to be pressed towards the hernial ring; and undesirable, because the farther we keep from the root of the penis the better for antisepsis. There is practically no objection to enlarging the abdominal wound, if necessary to insert two fingers instead of one. The wound should be sutured in layers: first the peritoneum, then the muscles, next the aponeurosis, both beneath and superficial to the recti if possible, and lastly the skin. Neglect of this precaution may lead to a ventral hernia. The catgut should be of the very best, and thoroughly aseptic. Of course if peritonitis were discovered at the operation the surgeon would take the opportunity to wash out the cavity and put in a drainage tube.

MORE SENSATIONALISM.

It appears that recently DR. B. A. WATSON, of Jersey City, N. J., a well-known and eminent surgeon, has been prosecuting a series of experiments on dogs for the purpose of ascertaining more accurately the effects of concussion on the spinal cord, both immediate and remote. He hoped thereby to lessen the obscurity which has hitherto existed on the subject and given rise to the expression of much diversity of opinion by medical witnesses in cases involving alleged spinal concussion from falls, blows, and railroad accidents. To imitate as accurately as possible the concussions of ordinary accidents, the dogs, under the influence of an anæsthetic, were dropped through sufficient space upon solid bodies, to be likely to produce a decided concussion. The subsequent symptoms were carefully noted for different lengths of time in different dogs the animals then killed with

chloroform, and the brains and spinal cords subjected to minute examination for ascertaining what pathological changes had been produced.

Dr. Watson conducted his experiments on his own premises and at his own expense, and so quietly that he seems not to have given annoyance to any of his immediate neighbors. But some rumors concerning the matter having reached the ears of the editors of the *Evening Journal* of Jersey City, a reporter was detailed to work the matter up in the usual sensational style. He appears to have visited the doctor's barn, and while talking with his coachman he heard some "*whinings and scratchings of dogs*," apparently on the floor above. And on this single *remarkable* item of information he founded half a column in the *Evening Journal* of June 3, with the following startling heading: "Story of Awful Cruelty—Torment Unspeakable Inflicted—A Physician in search of Knowledge puts Dogs to the Torture—A Machine for Inflicting Agony too great for Description." Of course this speedily brought upon the scene the President of the Society for Prevention of Cruelty to Animals, Mr. McAneny, and as the result Dr. Watson finds himself subjected to the expense of a legal prosecution, his motives impugned, and his character for unparalleled cruelty paraded before the public in the columns of the newspaper in the most reckless manner. It is claimed that Dr. Watson destroyed forty-one dogs in prosecuting his experiments, for which he ought to have received a vote of thanks from the whole population of Jersey City, on account of his having lessened, by that much, their chances of suffering from hydrophobia in the future. And if Mr. McAneny and the managers of the *Evening Journal* of Jersey City, had half as much regard for the character and suffering of individuals of the human species as they claim to have for dogs, they would never indulge in public insinuations or open charges of wanton cruelty and mercenary motives against an intelligent and honorable citizen until all the facts had been established by impartial investigation. It is well known to every intelligent physician and surgeon that the subject which Dr. Watson was investigating is involved in obscurity, and that every additional item of knowledge gained concerning it is of real value to the human race. Hence the public insinuation against Dr. Watson that he was practising unheard of cruelty on the dogs for the most mercenary motives in subserviency to a railroad corporation, is a ten-fold greater and more unjustifiable cruelty to him, to his family, and the profession to which he belongs, than would be the breaking of the backs of all the dogs in New Jersey.

THE SIGNIFICANCE OF THE TYPHOID BACILLUS.

FRAENKEL and SIMMONS report, in *Fortschritte der Medicin*, No. 4, 1886, their results in repeating Gaffky's experiments as to the inoculability of the bacillus of typhoid fever. Gaffky has obtained only negative results in inoculating this bacillus in animals of different species, but Fränkel and Simmons have been more fortunate in their results. By inoculating pure cultures of this microbe in the peritoneal cavity of rabbits and mice, they have had a great number of these animals fall ill only a few hours after the inoculations—the results in the case of mice being almost constant—with apathy, anorexia, and diarrhœa; but without an internal rise of temperature. All the animals in which the inoculations succeeded died before the end of the fourth day, and on post-mortem examination the following lesions were found: tumefaction of the mesenteric glands and spleen, the spleen having the external appearance of one recently removed from a case of typhoid fever in the human being. There was also tumefaction of the follicular glands of the intestines, and often considerable tumefaction, and sometimes ulceration of Peyer's patches. The ganglia of the axilla and of the groin were also red and swollen in the majority of the cases. In a small number of cases there were hæmorrhages into the serous cavities. There was no trace whatever of inflammatory reaction at the seat of inoculation.

The microbes with which the inoculations were made were cultivated in gelatin and on potatoes at an ordinary temperature; and it must be admitted that the results of the experiments are evidence as to the pathogenic properties of the typhoid bacillus. The inoculations caused some disease in the rabbits and mice, but was it typhoid fever? Of course this is a question which must remain undecided for the present. One point especially to be noted is that the experimenters could not induce the pathological lesions mentioned in rabbits and mice by injecting the cultures into the intestines; though A. Fränkel has recently communicated a disease to guinea-pigs by injecting cultures of typhoid bacilli into the duodenum, the symptoms of which were tumefaction of the spleen, mesenteric glands and of Peyer's patches, and in one case there was ulceration of Peyer's patches. It is a noteworthy fact that Fränkel and Simmons found the typhoid bacilli in the blood and tissues of the animals which died from their experiments. They are convinced that these bacilli continue to develop in the organs after death, even when portions of organs containing them have lain in alcohol for more than two days.

CHOLERA IN ITALY.—A despatch dated Rome, July 3, states that during the preceding twenty-four hours 155 new cases of cholera and forty-six deaths had occurred in the villages around Brindisi. This indicates a decided increase in the prevalence of the disease.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its fourth annual meeting at St. Louis, Mo., on the 6th of October next.

SOCIETY PROCEEDINGS.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

First Meeting, held in the Army Medical Museum, Washington, June 17 and 18, 1886.

(Concluded from page 24.)

DR. JAMES T. WHITTAKER, of Cincinnati, read a paper on

SPASM OF THE GLOTTIS IN RICKETS.

The author emphasized the fact that this accident belongs almost exclusively to rickets and dwelt upon the value of recognition of this fact, because rickets is generally speaking a curable disease, and the spasm of the glottis disappears with the successful treatment of its cause, while treatment addressed to the larynx directly remains without effect. He quoted from a number of authorities to show that this relation between the two affections is not so universally recognized in this country and England as in Germany and France. The two latest text books in Germany, Strimpell and Sichorst, declare, one that two-thirds, and the other that nine-tenths of all cases of spasm of the glottis depend upon rickets.

Spasm of the glottis is often the first sign to unmask rickets, for the other evidences of the disease are often attributed to other causes. Thus general malaise is attributed to dentition intestinal catarrh to errors in diet, fever and sweating to malaria, bone deformities to premature efforts upon the feet, etc. Spasm of the larynx indicates the stage rather than the degree of rickets, in that it occurs mostly in cases of rapid advance of the disease and does not appear in cases of slow progress. In the spring and fall, when rickets advances in leaps, spasm of the glottis has occurred in epidemic form.

Dr. Whittaker discussed next the various theories of rickets which continue to elude investigation to a degree characterized as exasperating. But facts accumulate which go to give it place among the chronic infections. The exemption of hot climates and mountains, Iceland, the Faroe Islands, the complete immunity of Davos, notwithstanding the improper feeding and improper hygiene of sucklings at these places show that faults in diet can not be the cause of it, and the symptomatology of it fits better among the chronic infections produced by specific causes.

Spasm of the glottis in the absence of any constant lesion falls among the neuroses. The question as to the reflex of direct character of the irritation producing it, was decided after a review of the evidence in favor of the latter, and since Rosenbach has demonstrated the micro-organisms of tetanus, which often begins with, and may go no further than trismus, the maintenance of a mycotic theory, for the laryngospasm of rickets, may be adopted as the best provisional explanation. The mode of onset and character of the accident were next detailed and the symptomatology illustrated with a typical case.

The inefficacy of anæsthetics and all direct means of treatment, as by intubation, tracheotomy, etc., were mentioned next, and douches, flagellations, electricity, cold air, direct appeals to the skin on the first appearance of attack, were described as the best means of combating and more especially of preventing the attack. Cod-liver oil, and more especially phosphorous, which may be looked upon almost in the light of a specific, were considered the best means of speedily relieving the rickets, and thus removing the cause of the laryngeal spasm. It has the most favorable prognosis of all kinds of laryngospasm, as Monte lost but eight of 329 cases.

DR. A. JACOBI, stated that this was a subject in which he was much interested. As has been said, this is almost always due to rickets. Its causation may be the pressure of the enlarged glands about the neck irritating the nerve. When the rickets disappears, the spasm of the glottis disappears. The disease may be primary or secondary. In forty-nine out of fifty cases of spasm of the larynx the cause is rickets, and in forty-eight of these it is rickets of the cranium and of the meninges of the brain. When the cranium is opened we find congestion. Cranio-tabes need not be developed to any marked extent. Where we have a succulent cranium, we have succulent meninges and a succulent brain. There is meningeal hyperæmia and meningeal effusion in such cases. In regard to prognosis, if you have six weeks during which to carry out proper treatment, you may be sure that the child will lose its laryngismus stridulus, but during that time the child may die in an attack.

DR. WILLIAM PEPPER described a case of spasm of the glottis in whooping cough, in which the attacks were so severe that on several occasions, the child apparently died. Nitrite of amyl was successfully used for the relief of these attacks. It was found that a combination of one part of nitrite of amyl with nine of sulphuric ether gave the best results.

DR. JACOBI had recently used nitro-glycerine for a similar purpose. He had used it in inflammatory hydrocephalus in young infants, and I believe with fair results.

DR. EDWARD T. BRUEN, of Philadelphia, read some

NOTES ON SOME CASES OF DIAPHRAGMATIC PLEURISY.

Dr. Bruen said that the object of his paper was to briefly state the diagnostic features of a diaphragmatic pleurisy. He did not attempt a review of the interesting historical literature of the disease. He admitted that the diagnosis of this affection was often established at the post-mortem table, since the pro-

cess is often latent and frequently possessed few distinctive physical signs. Primary pleurisy of this part of the pleura he considered rare. It is oftener a complication attendant upon acute inflammatory processes in the adjacent pulmonary lobes, the costo-parietal pleura, or in the liver or peritoneum. Under the foregoing conditions, invasion of the diaphragmatic pleura may be characterized by special symptoms, which may entitle one to designate this class of cases as acute inflammation of the diaphragmatic pleura. Inflammation of this portion of pleura may be a sub-acute or chronic progress developed in consequence of contagious sub-acute, or chronic inflammation or malignant growths. In such cases the process in the diaphragmatic pleura may become specialized by symptoms which should lead the clinician to differentiate the diaphragmatic pleurisy from the associated pathological changes.

In the acute form of this disease many of the more prominent and differential symptoms may be masked by the greater importance of the primary disease. As an example, the history of a case of croupous pneumonia of the right lung was related, which on the fifteenth day became complicated with diaphragmatic pleurisy. The case occurred in the month of March, and the diagnosis was confirmed by autopsy on the twenty-fifth day after the illness commenced. The patient was delirious, yet many of the characteristic symptoms were grouped in this case, including hiccough, only controllable by rest and morphia, a somewhat diagnostic feature.

The symptoms of diaphragmatic pleurisy may also be masked if the liver be enlarged or the intestines distended with gas, for these conditions may sensibly modify the freedom of the diaphragmatic movements, and the immobility of the diaphragm, one of the prominent symptoms of diaphragmatic pleurisy may not be differentiated and assigned to its true cause; but sometimes the characteristic pain over the situations elsewhere designated and the added disablement of the respiratory function may be noticeable. Diaphragmatic pleurisy in the writer's experience was chiefly right sided.

The terminations of the acute cases are dependent upon the associated pathological processes, and the gravity of the case is not necessarily increased if the symptom of hiccough is subordinate, the latter being an exceptional uncontrollable and exhausting symptom. In primary cases, a favorable issue may occur.

A case of diaphragmatic pleurisy in a negro was related, and attention specially directed to the interference with the lymphatic pulmonary circulation, and the disseminated areas of congestion which were secondary, also to some œdematous bosses, which formed over the right hypochondriac region. These were attributed to interference with the lymphatic circulation in the diaphragmatic pleura, and the intercostal tissues on account of the suspended functional play of the diaphragm and intercostal muscles. Recovery ensued in this case at the expiration of five weeks.

To show that the diaphragmatic pleurisy may progress to a marked degree without the manifestation of diagnostic symptoms, the case of a negro man was related, in whom post-mortem examination showed lesions of general miliary tuberculosis with marked thickening of the diaphragmatic pleura. It was shown in this case that the peritoneum was infected through the connecting channel of lymphatics between the pleura and peritoneum. During life some friction râles were heard along the upper border of the fifth rib and near the margin of the seventh in the axillary line, although a large amount of fluid was contained in the chest. The autopsy showed that the lung rendered rigid and thick by the tubercular infiltration, projected as a rigid mass into the pleural space, displacing the fluid and then the separation of flakes of exudation, doubtless produced the râles. It was stated that in the sub-acute or chronic cases, the special symptoms, diaphragmatic pleurisy were more conspicuous than in many of the acute forms of the disease. Illustrative cases were cited, one occurring in the Philadelphia Hospital, secondary to the induration of the right apex and general emphysema, in which the disease was correctly diagnosticated and the post-mortem examination made. The possible variation in the symptoms was considered and then a case of congenital deficiency of the diaphragm was described. The patient was 32 years old at death and had lived twenty-four years without a symptom to call attention to the anomaly. In the latter eight years of his life, asthmatic symptoms and shortness of breath were found to be due to thickening of the pleura and to phthisis. A case of diphragmatic pleurisy reported by Dr. Tyson, without special symptoms was discussed; also one by Dr. Daland. A case published by Dr. Pepper was cited, in which certain symptoms seemed consonant with those of diaphragmatic pleurisy. The whole thickness of the diaphragm was from one-half inch to two inches. The thickening was due to a morbid growth.

The diagnosis of a disease in which there is often so little that is distinctive, must necessarily be a difficult problem. It was shown by the relation of several post-mortem examinations that the process can exist in advanced form on one side of the diaphragm, at least, without special symptoms. If the diaphragmatic pleurisy should complicate any form of pulmonary hepatic pathological process, or circumscribed peritonitis of the superior part of the abdominal cavity, one may note that the subjective sense of respiratory distress and the objective symptoms are disproportionate to those conditions, and therefore the possibility of the existence of diaphragmatic pleurisy should be considered.

The more important diagnostic symptom, which, if present, should direct attention to the possibility of diaphragmatic pleurisy, are ranged in the order of their frequency and importance as follows: subjective sensation of pain over the zone which borders the diaphragmatic plane, pain at the point described by Dr. Mussey, viz., one or two fingers breadth from the middle line on a level with the tenth rib, or at the intersection of a line drawn from the osseous part of the tenth rib and one drawn along the sternum. Dr. Mussey explains the greater pain at this point by the greater play of the ribs and consequent friction against the inflammed nerve. Whether the nerve is actually

inflammed or simply irritated, must be decided by further investigation. The pains may be constant, yet also paroxysmal or provoked by pressure, or by increased respiratory motion by irritation of the diaphragm, swallowing or vomiting, or by the pressure of the distended abdominal viscera. Radiating mains around the chest and upper abdominal zone may occur. Fixation of the diaphragm is an equally important symptom, and secondarily the enforced thoracic character of the respiration is a very striking phenomena. There will usually be feeble or absent respiratory murmur near the diaphragmatic zone. Dry or moist friction râles may be audible along the convex surface of the diaphragmatic pleura. The percussion resonance may be dull when there is much exudation, but more commonly it is tympanitic since the partial paresis of the diaphragmatic muscle permits the pressure of the abdominal viscera to raise it somewhat above its usual area. In certain cases the posture of the patient may be bent forwards with hyochondriac retraction and epigastric hollowness, but the dorsal decubitus is very often maintained. The respiration is quickened in a few cases so that there may be dyspnoea or orthopnœa, but these symptoms may be almost entirely absent in subacute or chronic cases on account of the compensatory costal respiration. Cough is a variable symptom and the same may be said of hiccough, both are often absent. Finally, in the writer's experience, diaphragmatic pleurisy has been chiefly a thickening with adhesions, rather than accompanied with much fluid effusion. Hence, the importance of noticing the foregoing symptoms, since the presence of much fluid effusion would be more obvious by means of percussion, auscultation and other physical signs.

The necessity of differential diagnosis between costo-parietal pleurisy processes in the loter pulmonary lobes or pericardium were alluded to, also, perihepattis, circumscribed peritonitis in the upper part of the abdominal cavity. The exclusion of gastric ulcer and gall stones were discussed briefly and chronic pericarditis.

The prognosis was stated to be intertwined with the intercurrent pathological processes, and the power of adaptation possessed by the pulmonary system is so great that the duration, even of diaphragmatic pleurisy may be indefinite.

DR. T. MITCHELL PRUDDEN, of New York read a

DEMONSTRATION OF BACTERIAL CULTURES FROM A CASE OF MYCOTIC ENDOCARDITIS IN MAN AND OF SPECIMENS SHOWING THE EXPERIMENTAL PRODUCTION OF THE DISEASE IN RABBITS.

The communication was a preliminary one, the experiments not having yet been completed. For some years the presence of bacteria has occasionally been observed in the cardiac and peripheral lesions of malignant ulcerative endocarditis. It has, however, been found that not only, not in all cases of acute vegetative endocarditis, but not even all cases of ulcerative endocarditis present bacteria in their lesions. The speaker thought that the anatomical distinction was not clearly enough drawn between simple and malignant ulcerative endocarditis. Of eleven cases of well marked ulceration of the valves, which he had studied within the past four years, only four showed the presence of bacteria. In only one case of malignant ulcerative endocarditis was he able to isolate and study the living bacteria. This was a case of pyæmia following cuneiform osteotomy for club foot. The tests applied showed the bacterium to be the staphylococcus pyogenus aureus.

The experiments on animals were then described, and the following conclusions were drawn. If we sum up the results of combined morphological and biological examination of the cases thus far studied, we find that the sphero-bacteria found in the cardiac and peripheral lesions were the stryphococcus pyogenus and the staphylococcus pyogenus areus and albus, either alone or together.

The intravenous injection of either of these or a mixture of them into the rabbit after mechanical or chemical injury of the endocardium is capable of inducing lesions strictly analagous, if not identical with those found in malignant ulcerative endocarditis in man. The coccus sepsis of nicolain is capable of producing similar results. Neither the endocardial injury nor the intravenous injection of bacteria alone are sufficient to induce the cardiac lesion. Both are necessary.

As far as the observations go, they tend to confirm the view that malignant ulcerative endocarditis is simply one of the forms of pyæmic lesion determined by the predisposing conditions of the endocardium. Whether or not there are other forms of the disease induced by other species of bacteria or having no relation to bacteria at all, are questions which are more likely to be settled by experiment than by conjecture.

FRIDAY, MAY 18—SECOND DAY.

MORNING SESSION.

DR. W. T. COUNCILMAN, of Baltimore, read a paper on

CERTAIN ELEMENTS FOUND IN THE BLOOD OF MALARIAL FEVER.

It has long been known that changes in the blood occur in this disease. It is now known that in the red corpuscles there are certain bodies which appear to be living organisms, and these occur only in this disease. These are found by taking a drop of blood and spreading it on a slide so that there shall be but a single layer of corpuscles. These are stained with a week solution of fuchsin, and examined with a high power. The nuclei of the white corpuscles will be intensely stained, the red slightly stained, and in some of the red corpuscles will be seen brightly stained bodies of irregular shape. These exhibit distinct amœboid movements. The variety of their changes of form was illustrated by drawings. Certain hyaline bodies are also found and were described. The speaker then referred to the work of other investigators in this field. And gave a review of the results which they had obtained.

DR. HENRY M. LYMAN, of Chicago, read a paper on

TETANY.

Tetany may be defined as a more or less general-

ized, intermittent, usually tonic convulsion of the muscles of the limbs and trunk; sometimes involving the face and visceral organs, usually painful, but never attended with loss of consciousness. The disorder is functional, and is based upon no distinctive pathological lesions of the central nervous organs. It is manifested in a series of attacks which occur at intervals varying in length from a few hours to weeks or even months. These attacks are sometimes very abrupt in their onset; oftentimes they are preceded by headache, disturbances of the digestive organs, and various orders of sensation in the skin and muscles, after which the characteristic paroxysms appear. During the paroxysms the flexor muscles are usually the seat of contracture, but sometimes the extensor muscles of the limb are principally involved, so that the fingers and toes may be spread apart and extended. Sometimes the flexor muscles about the elbow are principally involved. Single muscles alone may be attacked. These contractions may be very energetically developed with considerable pain, or they may be sluggish and painless. The pain is usually due to the muscular spasm, but neuralgia may be associated with the cramp and the skin may sometimes become inordinately sensitive. The pain may at other times become located about the joints, which then present the characteristic appearance of rheumatism. Diminished sensibility in certain parts of the body may be sometimes observed during or after an attack. The special senses are rarely disturbed. The action of the heart is seldom changed except by transient palpitations; and only when the respiratory muscles are involved in severe cases is there any difficulty in breathing. A febrile movement is only remarked when inflammatory complications are present. Electrical tests indicate an increased excitability of the motor nerves which may sometimes even include the facial nerves.

The disease is rarely fatal, although death has occasionally resulted from prolonged spasm of the respiratory muscles. The duration of the disorder is quite variable and relapses are rather frequent.

Having no relation with any particular lesion of the nervous centres, tetany appears to be dependent upon a functional instability of the nervous and muscular organs. This instability is usually the result of diseases that affect the organs of digestion and the processes of nutrition. Congenital weakness, and the period of debility that precedes or follows any acute disease may then afford occasion for the manifestation of this particular disorder.

The principal diseases with which tetany may be confounded are, tetanus, organic diseases of the brain and spinal cord attended with contracture, epilepsy, especially the so-called cortical or Jacksonian variety, professional cramp and spasmodic phenomena of ergotism.

The treatment must be directed in a general way against the fundamental instability of the individual constitution. Mild attacks require no special therapy, but severe attacks often demand the energetic use of narcotics and anæsthetics for their relief.

Dr. John T. Carpenter, of Pottsville, referred to the association of tetany with septic poison. He described a case in which this association was quite distinct, and in studying his cases of tetany, particularly of the milder variety, he thought that he was able to trace them to septicæmia

Dr. A. Jacobi thought that in a large number of these cases there was reason to believe that there was meningeal hyperæmia. An occasional cause which has not been mentioned, is masturbation; this he had seen in one case in which the attacks always followed masturbation, and had not occurred before the age of puberty.

Dr. Reginald H. Fitz, of Boston, read a paper on

PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX; WITH SPECIAL REFERENCE TO ITS EARLY DIAGNOSIS AND TREATMENT.

The paper was based upon an analysis of 257 cases of unquestionable perforating ulcer of the appendix, and of 209 cases diagnosticated as typhilitis, perityphilitis and perityphilitic abscess. In the latter series the diagnosis was clinical not anatomical.

The important features in the etiology of appendiciti were considered also the limitations as to sex and age. It was found that the disease occurred most frequently among previously healthy youths and young adults, especially males, that a fæcal concretion or foreign body was present as a local cause in more than three-fifths of the cases. Attacks of indigestion and acts of violence, especially when indirect, were exciting causes in one-fifth of the cases. The action of these causes was favored by a constipated habit, or by congenital or acquired irregularities in the position and attachment of the appendix.

The first characteristic symptom of a perforating appendicitis was found to be a sudden severe abdominal pain. This occurred in eighty-four per cent. of the cases, and usually in the right iliac fossa, where tenderness could always be found, even when the pain was referred to some other locality. The pain was attributed to the actual perforation or the detachment of fresh adhesions.

Fever was the next characteristic symptom and occurred in the course of twenty-four hours. Finally came the swelling which made its appearance in the course of three days.

The chief source of danger from the appendicular peritonitis arose from its becoming generalized. Such a result followed most frequently between the second and fourth days. More than two-thirds of the patients died during the first eight days, and two-thirds of these between the fourth and eighth days inclusive.

The question of a differential diagnosis was then discussed. The determination in resolution was referred to. It was considered to take place in about one-third of the cases as approximately determined from the recorded cases of typhlitis and perityphlitis. Even resolution might be undesirable, since the number of cases of recurrent disease is considerable and might have been prevented by appropriate treatment.

The reader recommended at the outset the opium treatment with rest and a liquid diet, the food being given in small quantities, frequently repeated. If it became evident that general peritonitis was imminent at the end of twenty-four hours after the sudden in-

tense pain, the appendix should be exposed and removed. Usually the symptoms were not so urgent that the appearance of the swelling could not be awaited. Although Willard Parkes advised that the abscess might be opened as early as the fifth day, the practice has been to operate at a later date; 47 per cent. of the cases were operated upon in the second week and 26 per cent. after the third week.

More favorable results in the future were to follow the earliest possible opening of the swelling. This in most instances was at the outset a sac formed by a circumscribed peritonitis. It was usually present on the third day of the disease, dating from the pain, its first marked, characteristic symptom. Negative results from a diagnostic puncture did not contraindicate the operation.

DR. WILLIAM PEPPER related two cases which bear upon this point. On Saturday last, while making a post-mortem examination for another purpose, he examined the appendix. The appendix contained two hard concretions looking like date seeds and some hardened fæces. These must have been there for a long time, but there were no evidences of inflammation.

A few days before that, he made a post-mortem examination in the case of a man aged 40, who had for years sacrificed every interest in life for his business. On Monday he had some nausea and vomiting, for which he took a laxative. He returned to his home in the evening feeling badly and sent for a physician. There was vomiting; some fever. There was marked abdominal pain, which was relieved by the use of opium suppositories. On the fourth day the speaker examined him, but could detect no tumor in the right iliac region. There was frequent and free micturition. This symptom would have a bearing upon the possible existence of intestinal obstruction. Another marked symptom was tenesmus. Several large stools had followed the laxative. Enemas of warm oil produced no evacuation. Rectal examination gave a sense of indistinct fulness, but showed no hard tumor. Collapse set in on the fifth day and the patient died on the seventh day.

The question of laparotomy was carefully discussed. It was not performed at first because of the uncertainty of the diagnosis, and later, when the diagnosis became evident, because of the symptoms of collapse. At the autopsy no peritonitis was found. There was a contraction of the ascending colon at its junction with the transverse colon, but not sufficient to cause complete obstruction. A circumscribed abscess was found around the vermiform appendix, which was dilated. There was a large perforation, but no obstruction was found.

These cases have impressed upon him the view that perforation of the appendix is only the explosion of an old catarrhal appendicitis, and that it is not an acute idiopathic affection.

The diagnosis in these cases is a matter of great difficulty in the early days, except where it is associated with considerable pericæcal inflammation.

He agreed with Dr. Fitz, that early operation gives the only chance of saving the patient. He did not think the third day too soon. The difficulty is to arrive at a sufficiently clear diagnosis at that early day to justify laparotomy as an exploratory operation.

DR. J. T. DANA, of Portland, Me., thought that it is not rare to find inflammation of the appendix as a latent affection. In a case which he recently saw, the first symptom was the occurrence of general peritonitis. By exclusion he made the probable diagnosis of perforation of the vermiform appendix. The case resulted fatally in seventy-two hours. At the autopsy general peritonitis was found, and there was an opening in the appendix through which a concretion had escaped. A second body was found within the appendix. There had been no previous symptoms to call attention to disease of the appendix. This illustrates a class of cases of which he has seen not a few.

DR. A. L. LOOMIS said that from his experience, he thought that it was impossible in the majority of cases to make an early diagnosis by the ordinary means of diagnosis. Of the symptoms given by the patient the most certain indication seems to be given by the occurrence of a chill. When pain is marked it will usually be localized in the left side, but not necessarily. Recognizing the importance of the early diagnosis, he had decided several years ago in such cases to put the patient under the influence of an anæsthetic and examine by the rectum and externally. In the first case that he adopted this plan, the chilly sensation had preceded his visit twenty-four hours. By bimanual palpation he satisfied himself that there was an increase in the region of the appendix, and expressed the opinion that perforation had occurred and recommended operation. This was refused. Peritonitis set in within twenty-four hours and the patient died. In two other cases he made the diagnosis by the same plan. It must be remembered that the vermiform appendix does not occupy the same position in all individuals.

As soon as the diagnosis of perforation is made out, the operation should be performed.

DR. E. G. JANEWAY, of New York, remarked that these cases of appendix disease may be divided into three classes. In one an inflammatory process of the cellular tissue, with or without the formation of pus, is established. This may go on to recovery. If pus forms, surgical procedures should be resorted to. In another class of cases there is a circumscribed collection of pus in the peritoneal cavity. In this class operation should be resorted to.

DR. WILLIAM M. POLK, of New York, read a paper on

PERI-UTERINE INFLAMMATION.

The purpose of the paper was to consider those masses found about the roof of the vagina, generally to the sides of the uterus, sometimes behind, rarely in front. These have been described under the head of pelvic cellulitis and peritonitis, and have been the cause of much controversy. The speaker considered these masses to be the result of salpingitis due to uterine disease. Under ordinary circumstances the disease travels by way of the tubes, but in septicæmia it travels by all routes. Fifteen cases were re-

ported in which the symptoms and signs ordinarily ascribed to pelvic cellulitis and peritonitis were present, but in which opening of the abdomen showed salpingitis, peritonitis and ovaritis, there being no thickening of the cellular tissue. Except in those cases in which there was shortening of the ligaments, the uterus presented about the normal mobility. Pelvic abscess, in the writer's opinion, was in the majority of cases of tubal origin.

As regards the causation of these masses, anything that will produce endometritis may produce salpingitis and cause these masses.

Prognosis.—Death is the exception. This result is to be expected when septicæmia is the cause of the trouble, or when there is a depraved state of the system. The occurrence of abscess is usually followed by recovery. If the mass remains the permanent cure of the case is doubtful.

In chronic cases, after all other measures have failed operation may be performed. The tubes need not necessarily be removed. The tearing of the adhesions may be sufficient.

Conclusions.—Salpingitis is neither a new nor a rare disease. It is, with peritonitis, the most common form of inflammation about the uterus, holding in point of frequency almost the same relation to the extra-uterine surface as does endometritis to the intra-uterine.

The majority of cases get well. A small number do not get well, and these are capable of causing such danger and distress to the patient that abdominal section and removal of the tubes and ovaries is a necessity.

Dr. W. H. Welch, of Baltimore, read a paper on

AN EXPERIMENTAL STUDY OF GLOMERULO-NEPHRITIS.

Of the various processes which make up the pathological anatomy of Bright s disease, the two which at present awaken the greatest interest and the study of which promises the most fruitful results, are probably the changes which take place in the glomeruli and atrophy and necrosis of the epithelial cells.

The questions which have not as yet received full and satisfactory answers are, What is the origin of cells which often in nephritis occupy the space between the glomeruli and the capsule of Bowman? Does migration of the white corpuscles or diapedisis of the red corpuscles take place through the glomerular capillaries? What relation as to frequency and intensity do changes in the glomeruli play in the pathology of Bright's disease? In expectation that light might be thrown upon these questions, the speaker had experimented on rabbits and white mice, by the production of acute cantharadial poison. A concentrated solution of cantharadin in acetic ether was employed by subcutaneous injection. After a toxic dose, the urine diminishes and is finally suppressed. It contains albumen, hyaline casts, and a large number of leucocytes and red blood corpuscles.

Microscopical examination of the kidney in mice shows here and there foci of infiltration with small round cells, doubtless migrated white blood corpuscles. The epithelium of the convoluted tubes is in places normal in appearance; in other places it is swollen and often the inner part of the cells is broken off, appearing as a granular mass in the lumen of the tube. The most marked change is found in the malphigian bodies. In the greater number of these, there is between the glomerulus and Bowman's capsule a wide space, partly or wholly filled with cells. These are larger than white blood corpuscles. They are frequently arranged in a crescentic mass. These appearances are similar to those described in glomerulo nephritis in man. In the latter case these cells are attributed to the swelling and desquamation of either the capsular or glomerular epithelium. Such explanation does not hold in the present case. The epithelium of the capsule is often intact and the glomerular epithelium may retain its normal position. More frequently it is swollen and may desquamate. There are no appearances which justify the derivation of the greater number of the cells from the epithelium of the glomerulus. These cells can not be regarded as white blood corpuscles changed by the action of the poison, for the cells circulating in the blood are exposed to the same poison. These cells may be derived from the epithelium of the convoluted tubes in immediate communication with the malphigian bodies. The cells in the capsular space are identical with those in the convoluted tubes. At times there can be found groups of cells arranged in the form of a ring, with a central space, just like the epithelium of the uriniferous tubules.

It is difficult to decide whether the cells occluding the glomerular capillaries in acute and chronic Bright's disease are white blood corpuscles or endothelial cells, but the speaker inclined to the view that at times they are detached endothelial cells. Swelling of the endothelium and accumulation of cells in the glomerular capillaries appears to be a nearly constant lesion in the acute nephritis of scarlet fever. In one case examined this was almost the only lesion in the kidney. Occasionally pathologists meet with kidneys in which the apparent changes do not explain the symptoms. In such cases careful examination of the glomerular capillaries should be made. It is difficult to think of any lesion of the kidney more destructive to its function than occlusion of the capillaries.

While disposed to attach much importance to the changes in the glomerular capillaries, we are not justified in asserting that these changes constitute the primary and essential cause of Bright's disease. They are co-ordinate with other lesions.

He suggested that instead of the term glomerulo-nephritis, the term glomerulitis be used. The form characterized by accumulation of the cells between the glomerulus and Bowman's capsule may be designated desquamative glomerulitis, and that characterized by the accumulation of cells or by other changes within the capillaries may be called intra-capillary glomerulitis.

Dr. Wm. Osler, of Philadelphia, read a paper on

BICUSPID CONDITION OF THE SEMILUNAR VALVES AND ITS RELATION TO AORTIC VALVE DISEASE.

A bicuspid condition may be said to exist when two of the three sigmoid cusps have more or less

perfectly fused so that the arterial orifice is guarded by only two segments. The points alluded to were: *First.* The frequency of the condition. The abnormality is a well-recognized one. Dilga recently collected the statistics, and has found sixty-four cases of this condition in the pulmonary artery, and twenty-three in the aorta. This statement gives an incorrect idea of its frequency in the latter vessel. In over eight hundred autopsies at the Montreal General Hospital there were eighteen cases, seventeen in the aortic valves alone, and in one pulmonary and aortic segments were both involved. In one hundred and ten cases of valvular disease of all kinds, there were fifty-seven in which the aortic valves were affected, so that this condition existed in over thirty per cent. of all cases of aortic valve disease.

Second. The clinical history. The part played by this condition in aortic valve disease is illustrated by the history of the eighteen cases. Two died suddenly from cardiac syncope. Twelve presented the pictures of chronic aortic insufficiency, and in four the lesion was accidentally found, death having resulted from other causes. In sixteen cases there was hypertrophy of the heart, chiefly of the left ventricle. With the exception of one case, a fœtus at the eighth month, the patients were adults. The ages ranged from 20 to 60 years. This contrasts in a marked manner with the history of this defect in the pulmonary artery. A great majority of the instances present other serious anomalies of development, and death takes place before puberty.

Third. The mode of origin of the lesion. Unquestionably the majority of the cases are congenital, and result either from faulty development or a fœcal endocarditis. The former view seems the more probable. (a). From the fact of the existence of the condition in fœtal life without any traces of endoditis. (b). The occurrence of all grades of the condition, from fusion of the attached terminal margins of continuous segments to perfect fusion of the cusps with scarcely an indication of the line of union. (c). A comparison between the size of the conjoint and single cusps indicate that the anomaly must take place at a very early period of development, as in some instances the single valve equals or is even larger than the fused segments, while in others the slight inequality in size is scarcely consistent with the view that a fœcal endocarditis, subsequent to the formation of the valves, had caused coalescence of the curtains. We do not know accurately the details of the development of the sigmoid valves, but Tonge's interesting observation on the chick that two of the cusps are formed before the third may have some connection with the production of this anomaly.

DR. GEORGE M. STERNBERG, U.S.A., read a paper on

THE BACILLUS OF TYPHOID FEVER.

Recent researches support the view that the bacillus described by Eberth in 1880, bears an etiological relation to enteric fever, although the final proof that such is the case, is still wanting. This proof would consist in the production in one of the lower animals of the specific morbid phenomena, which characterize the disease as it occurs in man, by inoculation of a pure culture of the bacillus. Thus far we have no evidence that anyone of the lower animals is subject to the disease, as it occurs in man; but Fraenkel and Simmonds have shown that the bacillus of Eberth, is a pathogenic organism, and that pure cultures injected into the peritoneal cavity of mice or into the circulation of rabbits causes the death of these animals, and that colonies of the bacillus are found in the spleen, which resemble in every respect the colonies found in the spleen and other organs of typhoid cases.

The researches of Eberth, Meyer, Gaffky, Fraenkel and others, indicate that this bacillus is constantly present in the intestinal glands, and in the spleen of typhoid cases, and that Gaffky has shown that pure cultures may be obtained from the spleen, even in cases in which a microscopical examination fails to demonstrate the presence of the characteristic colonies. The researches of Brieger show that a toxic ptomaine is produced as a result of the vital activity of Eberth's bacillus, when it is cultivated in albuminous culture media. This injected into guinea pigs, causes salivation, diarrhœa, debility, dilated pupils, rapid respiration and death at the end of twenty-four or forty-eight hours.

Demonstrated facts relating to the propogation of typhoid fever indicate that it is due to an organism, which is capable of multiplication external to the human body in a variety of organic media at comparatively low temperatures. Eberth's bacillus complies with these conditions. In consideration, therefore of its constant presence and the absence of any other organism as shown by microscopical examination and culture experiments, the inference seems justifiable in the present state of science, that this bacillus bears an etiological relation to the disease in question.

DR. E. C. SEGUIN, of New York, made a

CLINICAL REPORT OF NINE CASES OF HEMIANOPSIA.

He presented an abstract of nine cases of lateral hemianopsia due to cerebral lesion and called attention to the following points of interest: Of the nine cases, five had right lateral hemianopsia, and four left lateral hemianopsia. Three of the cases of right sided hemianopsia presented the following association of symptoms: hemianopsia, right-sided hemiparesis with post-paralytic ataxia and partial hemianæsthesia. Two of these cases also exhibited alexia without other aphasic symptoms. It is interesting to note that all cases of right-sided hemianopsia do not have alexia, and also that post-paralytic ataxia is not always accompanied by hemianopsia, though probably this is more common than is generally supposed. The six other cases were practically cases of pure hemianopsia, *i. e.*, there were no paralytic or sensory symptoms, or aphasia indicating extensive cerebral disease.

In the first category the lesion is probably placed on the outer edge of the thalmus, so as to involve the fasciculus opticus and the posterior division of the internal capsule. In the second category, the lesion is quite certainly further back or in the white

matter of the occipital lobes. In two cases of the second category, marked and increasing weakness of both legs was present, a symptom perhaps due to the upward and forward extension of a tumor toward the paracentral lobule.

A very peculiar symptom in two cases of the second category, and one which the author thinks is new, was the occurrence of hallucinatory images for a short time in the darkened half-field. This is a symptom of irritation, and analogous to the convulsive movements which sometimes precede paralysis of a limb when its motor centre is being destroyed by disease.

Ophthalmoscopic changes were observed in only one case of the second category. In this case, neuro-retinitis developed in both eyes under the physician's observation about one month after the first visit.

In no case was the hemiopic pupillary reaction of Wernicke observed.

A specialy pathological question came up in one case of the second category. In 1883, the patient had glaucoma with irregular hemiopic defect, first in one eye, and later in the other, and yet only fourteen months later was pure geometric hemianopsia found. Could glaucoma produce this? The speaker thought not; being unable to conceive how an intraocular pressure could so affect the retina and optic nerves as to produce a strictly hemiopic defect in dissimilar halves of each eye. A central lesion is quite certain.

A very puzzling point is the perfection of central vision in these and other cases of central hemianopsia. The vertical line always passes by the point of fixation, no matter on which side the blindness is. We must conclude that the macula is not involved in the loss of function, and the question arises, can the macula have a double ennervation from the visual centre? This point the author intends to study thoroughly. The speaker also exhibited specimens illustrating the seat of lesion in certain cases of hemianopsia.

Dr. Henry F. Formad, of Philadelphia, exhibited specimens of

CYANOTIC INDURATION OF THE KIDNEYS.

This condition is produced by anything which interferes with the circulation through the kidneys. The shape of the kidney where the induration results from alcoholism is rounded and shortened. The kidney presents a pig-back appearance. Where the cyanotic induration results from heart disease, the shape of the organ is not altered, as the condition takes place gradually.

The following papers were read by title: *Notes of a Case of Hepatico-Bronchial Fistula*, by Dr. J. E. Graham, of Toronto; *Pancreatic Hæmorrhage as a Cause of Sudden Death*, by Dr. F. W. Draper, of Boston; *Pernicious Anæmia*, by Dr. A. Jacobi, of New York; *A Case of Hodgkins's Disease*, by Dr. F. Forsheimer, of Cincinnati.

A vote of thanks was tendered the Government officers and the profession of Washington for courtesies extended, and the Association adjourned.

NINTH INTERNATIONAL MEDICAL CONGRESS, TO BE HELD IN WASHINGTON, D. C., COMMENCING SEPT. 5, 1887.

Preliminary Organization.

Section XIV. Public and International Hygiene.

President—Joseph Jones, M.D., of New Orleans, La.

Vice-Presidents—John Simon, 40 Kensington Sq., W. London; B. W. Richardson, 25 Manchester Sq., W. London; J. W. Thudicum, 11 Pembroke Garden, W. London; A. N. Bell, Brooklyn, N. Y.; J. N. McCormick, Bowling Green, Ky.; J. Berrien Lindsey, Nashville, Tenn.; J. F. Y. Paine, Galveston, Texas.

Secretaries—Geo. H. Rohè, Baltimore, Md.; Walter Wyman, U. S. Marine Hospital Service.

Council.—Thomas Antisell, Washington, D. C.; Le Baron Botsford, St. Johns, New Brunswick; Henry Carpenter, Lancaster, Pa.; Richard H. Day, Baton Rouge, La.; J. W. Dupui, Baton Rouge, La.; Oscar DeWolf, Chicago, Ill.; Landon B. Edwards, Richmond, Va.; James Finney, New Orleans, La.; Wiley K. Foot, New Orleans, La.; Albert L. Gibson, Washington, D. C.; E. L. B. Godfrey, Camden, N. J.; D. W. Hand, St. Paul, Minn.; Thomas Hébert, New Iberia, La.; Charles H. Hewitt, Red Wing, Minn.; Joseph Holt, New Orleans, La.; Stanhope Jones, New Orleans, La.; Benjamin Lee, Philadelphia, Pa.; Henry Leffman, Philadelphia, Pa.; J. R. Le Monnier, New Orleans, La.; Henry F. Lyster, Detroit, Mich.; A. W. Leighton, New Haven, Conn.; Wm. R. Mandeville, New Orleans, La.; N. R. Milner, New Orleans, La.; H. L. Orme, Los Angeles, Cal.; R. H. Reed, Mansfield, Ohio; W. L. Schenck, Osage City, Kan.; C. M. Smith, Franklin, Ohio; R. M. Swearingen, Austin, Texas; M. K. Taylor, U. S. Army; G. B. Thornton, Memphis, Tenn.; Wm. M. Welsch, Philadelphia, Pa.

SUBJECTS FOR DISCUSSION AND FOR THE PREPARATION OF MONOGRAPHS.

I. Quarantine.

a. History of quarantine.
b. Conduct of quarantine stations.
c. Sanitation of ships.
d. Sanitation of maritime ports.
e. Regulation and control by sea and land of such diseases as yellow fever, Asiatic cholera, Oriental plague, Oriental leprosy, typhus and typhoid fevers, small-pox, scarlatina and measles.
f. The relations of the duration of quarantine as determined by the natural history of various diseases, and more especially by the period of incubation of their specific poisons.
g. Value of heat (dry heat and heated steam) and steam in the disinfection and cleansing of infected vessels.
h. Relative value of sulphuric acid and other agents, as carbolic acid, sulphate of iron and bichloride of mercury, in disinfection.
i. Describe the apparatus for the application of disinfectants.

j. Quarantine should embrace not merely detention, but also thorough cleansing and disinfection. Whenever necessary, the cargo should be discharged and thoroughly aired and fumigated.

k. Structure and conduct of quarantine hospitals.

l. Land quarantine, its value and mode of conduction.

m. The proper structure, ventilation and conduct of railroads so as to prevent the dissemination of contagious and infectious diseases.

n. Shall the General Governments of the civilized world assume control of all the quarantine systems, and by mutual consent reduce the entire subject of quarantine to order and apply the most improved methods of sanitation and disinfection?

o. Shall the Government of the United States assume charge of the entire subject of quarantine and relieve the individual States of the Union of all further responsibility of regulating quarantine either with foreign countries or with each other?

II. Military Hygiene.

a. Food of the soldier.

b. Clothing of the soldier.

c. Exercise of rest: effects of infantry, cavalry, artillery and bicycle exercise upon the soldier.

d. Shelter. Structure of tents.

e. Water supply of armies; method of testing and improving.

f. Military prisoners and military prisons.

g. The establishment of uniform rules to be recognized by all civilized nations for the treatment, food and clothing of military prisoners, and for the regular and continuous exchange of all military prisoners.

h. Hygienic arrangements of field and general hospitals.

III. Naval Hygiene.

IV. Structure and Arrangement of Prisons and Treatment of Prisoners.

a. Treatment of prisoners: food, clothing and occupation.

b. Has the State the right to work prisoners in swamps and marshes and cause the destruction of human life by the neglect of all the laws of hygiene?

c. Are not deaths occasioned amongst prisoners by cruelty, overwork, scant clothing, poor food, directly chargeable against the officials composing the government, whether acting in behalf of a city, county, State or Government?

V. Structure, Hygienic Arrangements and Ventilation of Buildings.

a. Proper condition of the soil for the location of buildings.

b. Relations of building material to moisture and to fire.

c. Public buildings: legislative halls, depots, churches, etc.

d. School-houses and colleges.

e. Factories.

f. Dwellings.

VI. Influence of Agriculture on Public Health.

a. Influence of overflows on the public health.

b. Importance of drainage; clearage of swamps, marshes and land generally.

c. Influence of the cultivation of rice on the public health.

d. Influence of cotton, tobacco and sugar, and indigo culture on the public health.

VII. Food and Its Adulterations.

a. Influence of different methods of preserving food on the public health.

b. Influence of canned food upon the public health.

c. The injurious effects of lead, copper, tin, zinc, antimony, etc., upon food; said metals being used for culinary vessels, dishes and receptacles.

VIII. Relations of Water to the Public Health.

a. Properties of wholesome potable water.

b. Water supplies of cities.

c. Proper supply to each inhabitant, etc. Transmission of disease germs through the medium of water.

IX. The Influence of Alcohol upon the Public Health.

a. Wine.

b. Malt liquors.

c. Distilled liquors.

X. Influence of Narcotics upon the Public Health.

a. Tobacco.

b. Cannabis indicus.

c. Opium and its preparations.

d. Chloral hydrate, chloroform and ether.

XI. Influence of the Electric Light upon the Public Health.

XII. Influence of the Modern Modes of Travel upon the Public Health.

a. Effects of railroad travel in inducing paralysis.

b. Hygienic structure and conduct of railroad trains so as to avoid the introduction and dissemination of infectious and contagious diseases.

c. Structure and arrangement of sailing and steam ships.

d. Hygienic regulations of officers, crews and passengers.

XIII. Relations of Filth to Public Health.

a. Relative merits of the various plans of sewerage and of the disposal of garbage and fæcal matter.

b. Organization of the scavenger force.

c. Best method of disposing of the dead.

d. Effects of putrefaction in the dissemination of the disease germs of contagious and infectious diseases such as cholera, yellow fever, small-pox, measles, scarlet fever, etc.

e. Cremation.

XIV. Relations of Disease-Germs to the Origin and Spread of Contagious and Infectious Diseases and to Endemic and Epidemic Diseases.

a. Relations of malaria to the public health.

b. Nature of the malarial poison.

c. Physical, chemical and microscopical characters of the poison or cause of the following diseases: Yellow fever, typhoid fever, typhus fever, relapsing fever, measles, scarlatina, syphilis, phthisis, Oriental leprosy, elephantiasis, small-pox.

d. Relations of phthisis to the public health.

e. Relations of syphilis to the public health.
f. Measures for the arrest of small-pox.
g. Value of cow-pox vaccination.
h. Accidents attending vaccination. Transmission of the syphilitic virus through the medium of the vaccine virus.

Authors desiring to contribute to the Fourteenth Section of the Ninth International Medical Congress should commence their labors at the earliest practicable moment and communicate with

JOSEPH JONES, M.D.,
Post Office Box 1500, New Orleans, La.

---

40 KENSINGTON SQUARE, W. LONDON, JUNE 8, 1886.

My Dear Sir:—I feel myself highly flattered by the invitation, with which you honor me, that I should be one of the Vice-Presidents of Section XIV of the International Medical Congress about to be held in Washington.

To my very great regret, I have no hope that it will be in my power to attend the Congress; and I feel doubtful whether, in that state of the case, you will still think me qualified for the honor you so kindly propose. This I can only leave to your judgment; subject to which, my answer to your very flattering invitation would of course be, that I should be proud to hold, under your Presidency, any honoring post for which you may deem me fit.

Meanwhile, and at at any rate, permit me to offer you, from this side of the Atlantic, my heartiest good wishes for the success of the Congress in general, and of Section XIV in particular; and believe me, dear sir, with much respect,

Your obliged faithful servant, JOHN SIMON.

Professor Joseph Jones, M.D., 156 Washington Ave., New Orleans, La.

---

11 PEMBROKE GARDEN, W. LONDON, JUNE 9, 1886.

JOSEPH JONES, M.D., NEW ORLEANS:

My Dear Sir:—I have the honor to acknowledge the receipt of your letter of May 17 ultimo, in which you express to me your wish that I should be appointed a Vice-President of the Fourteenth Section of the Ninth International Medical Congress, to be held at Washington in 1887.

In reply I have pleasure in informing you that I shall consider it a great honor to fill this office, which will be so worthily presided over by yourself. I sincerely hope that circumstances will permit me to visit America, and to make your personal acquaintance. Yours most faithfully, J. W. THUDICUM, M.D.

---

25 MANCHESTER SQUARE, W. LONDON, JUNE 7, 1886.

My Dear Sir:—It will give me the greatest pleasure to accept the office of a Vice-President of the Section on Public and International Hygiene of the International Medical Congress to be held at Washington in September, 1887.

I do not know whether this intimation should be sent to you direct or to some other officer. I therefore send it to you direct with the request that you will send it to the right quarter.

Yours always truly, B. W. RICHARDSON.

Professor Joseph Jones, M.D., Post Office Box 1500, New Orleans, U. S. A.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Causes of Sterility—The Pancreatic Juice—Horny Tumor of the Scalp—The Abuse of Carbolic Acid—M. Chevreul.

In a clinical lecture recently delivered by Professor Pajot, he stated that among the causes of sterility uterine catarrh is about the most common. Next in the order of frequency may be mentioned the narrowness of the os uteri and the peculiar conical form of its cervix, which is almost characteristic of the sterile condition. When, however, the external orifice of the neck is cup shaped, which gives the sensation to the touch of a small depression produced by a lentil imbedded in potter's clay, the affection in this condition is curable. Another cause of sterility in women is attributed to uterine displacements, which have often been, and still are, turned to profitable account by quacks, and unfortunately, also by medical men who prefer their own interests to those of science. Uterine displacements are divided into two great classes: versions, or deviations, and flexions. The former constitute obstacles almost insurmountable to fecundation, whereas the latter are not always so.

Here is a case in point: "About two years after the war I received a visit from an Austrian lady who came to consult me. On examination I found that she had an extreme retroflexion, for which she had consulted nearly all the doctors in the world, and they all, except Scanzoni. had declared that under the circumstances pregnancy was impossible. She menstruated regularly and without pain. I told her that if the menses could pass out other things could pass in, and that her displacement was not a hopeless obstacle to conception. A week after I saw her she became pregnant, and was subsequently confined naturally, after which I kept her in bed till her menses reappeared (three months), and succeeded in producing a perfectly straight uterus, of which I was very proud. A year later the displacement was as bad as ever, but that did not prevent her from having two or three more children. This fact proves that those who wish to employ great measures are in the wrong by wishing to replace the uterus to its normal position by means of special instruments. This is all useless; the best replacer of the uterus is pregnancy. A displacement cannot be considered as a disease; it is an infirmity, and moreover, an infirmity easy to be borne. It is said that this affection causes great inconveniences to women. For my part, I declare that if women had not been told by the doctor or midwife of the existence of such an

infirmity, they would never suspect it, so little does it inconvenience them. During pregnancy, however, this condition might constitute a grave position. A uterine displacement, when it is not exaggerated, causes no annoyance. It is only in cases of considerable descent, which weighs heavily and drags, that a displacement becomes a real inconvenience. The displacement is, in this case, a real obstacle to fecundation, but this is not an insurmountable obstacle.

"In lateral versions or deviations, the neck of the womb may be closed by the walls of the vagina. It is necessary to be aware of this circumstance, so that the existence of sterility in a woman the subject of such a condition would cause no surprise."

At a recent meeting of the Academy of Sciences Professor Chatin read, for M. Defresne, a well-known pharmacian, a work on the "Pancreatic Juice." In this work the author explains what becomes of this juice when introduced into the stomach at the commencement of a repast, when the acidity of the gastric juice is then the result of the hydrochloric acid which it contains. The new researches of M. Defresne have authorized him to express this opinion, viz.: that the pancreatic juice, when introduced into the gastric juice at the commencement of a repast, passes into the state of zymogen in the circulation, and is afterwards separated by the liver, the parotid glands, and the spleen. In the liver it becomes a hepatic zymosis, capable of saccharifying glycogen; in the parotids, a ptyalic zymosis, capable of saccharifying starch in the mouth; and in the spleen, a zymosis which, transmitted to the pancreas, communicates to the juice of this gland the property of saccharifying starch in the duodenum. These experiments demonstrate the good results which may be obtained by administering pancreatine by the stomach.

At the Academy of Medicine Dr. Vidal recently made a communication on the part of Dr. Dubrandy, of Hyères, in which the author relates a curious case of a horny production of the scalp in the human subject. This horn, remarkable for its size, twisted in a spiral form like the horn of a deer, measured 21 centimetres, or about 8¼ inches, in length, and 6 centimetres, or about 2⅓ inches, in circumference; it is cylindrical, of a deep red color, and its surface is striated and furrowed. This singular production appeared, at the age of 40, in a woman who was very stout, weighing 95 kilogrammes, or about 209½ pounds, and in eleven years, that is to say, to the day of her death, the horn had acquired the dimensions related above.

In a paper by Dr. Léon Gautier, on the "Abuse of Carbolic Acid," the author, in citing a note on the subject in a Swiss medical review, states that several cases have come under his own observation of irritation produced by solutions of carbolic acid, even when largely diluted. Varicose ulcers, furuncules, phlegmonous inflammations are aggravated by phenic acid dressings. Even in traumatisms, when the wound is not simple, when the skin is more or less profoundly contused in its neighborhood, these applications may also be very injurious. Dr. Gautier concludes his paper with the recommendation that carbolic acid ought to be proscribed whenever the skin is inflamed or contused; its use should be reserved to simple wounds, even those of operative wounds effected in healthy tissue.

In the event of the death of a distinguished member of the Academies or of other learned bodies, it is customary, at their first meeting after the occurrence, for the president to pronounce a eulogy on the deceased member and at once dismiss the assembly without further proceedings, as a mark of respect to the departed. A curious contrast to this manifestation of mourning took place at the meeting of the Academy of Sciences last week, when the President took the opportunity of congratulating M. Chevreul, the eminent chemist, on his attaining his 100th year, which, however, he only completes in August next; but in consequence of the probable absence of many of the members during that month, it has been thought fit to anticipate the event. The Presdent, in addressing the illustrious centenarian (the members standing) presented him with a magnificent statue in bronze, representing "Study and Meditation," by M. Paul Dubois, the well-known sculptor, who, in designing the statue, took M. Chevreul himself as a model. A soon as the presentation was made—which was accompanied by a bronze medal bearing his effigy to commemorate the event—the proceedings of the meeting were at once closed, in compliment to the venerable academician, as such a circumstance had never been known in the annals of the Institute. M. Chevreul has been sixty years a member of the Academy of Sciences, he having been elected in 1826, and it will be remembered that ten years ago he was presented with a gold medal bearing his effigy, to commemorate the fiftieth year of his academical career. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Special Meeting of the Fifth District Branch—Galvano-Cautery in Genito-urinary Diseases—An Excursion to the Catskills.

All who were privileged to attend the recent special meeting of the Fifth District Branch of the New York State Medical Association will long retain the pleasantest memories of that festal occasion. In the morning a meeting of the Executive Committee was held at the rooms of the Young Men's Christian Association at Rondout, on the Hudson, which is now a part of the ancient city of Kingston, with which it is continuous; and afterwards the Fellows, invigorated for the labors of the day by a substantial midday dinner at the Mansion House near by.

In the afternoon the scientific proceedings were opened by a paper by Dr. Wm. B. Eager, of Middletown, Orange county, entitled "*Inquiry as to the Cause of Death Following Confinement, on the Sixth Day, with Singular Nervous Symptoms;*" after which Dr. Robert Newman, of New York, gave a demonstration of a new instrument for galvano-cautery in

diseases of the prostate, bladder and urethra. Dr. J. W. S. Gouley, of New York, expressed himself as entirely opposed to the methods of treatment proposed by Dr. Newman. But, however skeptical he might be, he said, he was certainly open to conviction whenever their utility had been demonstrated to his satisfaction.

Later in the afternoon the company took the cars of the Ulster and Delaware Railroad *en route* for the Hotel Kaaterskill, and with them were quite a large number of ladies, who added no little to the pleasure of this most delightful trip. After leaving Kingston there is a charming view of the mountains on the right, and in the course of a few miles the road enters, at Shokan, the great Shandaken Valley, which is of very considerable width at first, but gradually becomes narrower and increasingly picturesque as one advances into it. Not the least of its attractions is the romantic Esopus River, the course of whose clear-flowing and babbling waters the road follows for many miles; while on either hand loom up the grand old mountains, affording at every turn some new and beautiful prospect. At Phœnicia the party changed cars for the Stony Clove Railroad.

While it does not compare in boldness and grandeur with either the Kaaterskill or the Plaaterkill Clove, Stony Clove has always been one of the noted features of the Catskills, and in former years it was a favorite resort of the disciples of Izaak Walton, who had many an incredible tale to tell of their trouting adventures, and who doubtless now consider the construction of a railway through the midst of their sequestered haunts as nothing short of sacrilege. The writer well remembers a pleasant tramp that he once had, long before the railroad was built here, through Mink Hollow, the next notch to the eastward, and across the mountains to Stony Clove. At one point between the two Cloves the view was of most varied and imposing beauty. To the extreme left loomed the vast Overlook Mountain, from this direction appearing to taper to quite a sharp point, and, very near the lofty summit, the Overlook House, glistening in the sunshine. Next came some smaller spurs of the Catskills, above which we saw the broad valley of the Hudson, the shining river itself, and the hazy Berkshires beyond. A little farther to the right was Lake Hill, round and shapely, with its placid sheet of water at its foot, mirroring the fair blue skies; while directly opposite, in the very centre of the landscape, stood Mount Tobias, the most conical peak in all the Catskills, majestic and solitary, no other mountains being in its immediate vicinity. Next came a group of the mighty Shandohens, among which could be seen Cornell, the Wittenberg, and the great Slide Mountain, the monarch of the range, all clustered together and looking very blue and beautiful at this distance, with outlines so soft and fair that one might readily fancy them the Delectable Mountains, as they appeared to the eye of weary Christian in his toilsome journey. Coming around, in one grand sweep, to the extreme right, we reach the Catskills again, green and near at hand; while immediately behind us towers to a sublime height a huge peak of old Oldabark Mountain, like a great sentinel watching with solemn presence over the whole.

Not long after leaving this enchanting spot we entered the woods, and in almost an hour came down into a Clove which we supposed to be the one we desired. To make sure, we inquired at the first house we came to, and were duly informed that we were on the Stony Clove road. After passing the next house, which was about two miles distant, we plunged into the forest primeval, and the track became more and more overgrown as we proceeded. A wild torrent roared now on one side and now on the other of our path, which became steeper and steeper; and, the scenery growing wilder and wilder at every step, we began to doubt very seriously whether we were in Stony Clove at all. It was some time before any outlook could be obtained, but when we did succeed in this the fact became developed that we were down in a deep gorge between two immense mountains, and that a vast wall towered directly in front of us.

Thinking that we should probably have to spend the night in the woods if we entered much further, we concluded to retrace our steps for two or three miles, till we came to the last house we had passed; and having arrived there, we found a lad to whom we stated we were in considerable doubt as to just where we were at that particular time. To our interrogatory, "*ubi terrarum sumas?*" (which, however, we addressed to him in the vernacular), the ingenuous youth, evidently without any intention whatever of being facetious, replied that this was Greene county. Well, that was encouraging, to be sure, as we supposed that we were still in Ulster county; but, at the same time, the information was scarcely definite enough to be of much practical service. Further questioning, however, elicited the fact that we had been up "Warner's Hill;" and when we inquired where in creation, then, the Stony Clove was, our informant said, pointing to a huge elevation on our right, "On the other side of that mountain." At this statement our hearts went down into our boots, as we thought of a weary tramp of five or ten miles to get around the mountain; but we were quickly reassured when he told us that there was a path through a notch which he pointed out. Taking this, we came out, after a couple of miles' walk through the woods, much to our delight, at Martin's saw-mill in Stony Clove.

As we had to go on a mile further before we could get dinner, it was more than half-past four when we sat down to that meal, and by this time it may well be imagined that our appetites had become sufficiently ravenous. Just as we finished our repast, one of the large chair-wagons which one is apt to meet on the roads in this part of the Catskills, came along, and as we replied in the affirmative to the driver's inquiry, "Be you a goin' through Hunter Notch?" he very kindly offered to give us a lift. We thus rode with him for about three miles, when he turned off to go to Hunter village, whither he was returning with his empty wagon, after taking a load of chairs to Phœnicia.

P. B. P.

(*To be concluded.*)

NECROLOGY.

GEORGE SUTTON, M.D.

GEORGE SUTTON, M.D., of Aurora, Indiana, was born in London, England, June 16, 1812, died at his residence, overlooking the town of Aurora, Indiana, June 13, 1886. In 1819, his parents with their children, emigrated to America and settled at Cincinnati, Ohio, but in the spring of the following year removed to a farm on the White Water in Franklin county, Indiana. Here the subject of this notice grew up as a farmer's son, and received his preliminary education in the country log school house, then common in the new States. His first great sorrow was the death of his mother, which occurred in 1827. In 1828 he was sent to Miami University where he obtained a more thorough knowledge of mathematics and the languages than he had been able to get from any of his previous teachers. We are not informed if he graduated, but his knowledge of the languages was good. In 1832 his father returned to Cincinnati, and the same year he began the study of medicine under Dr. Jesse Smith, who a short time afterwards was attacked with cholera and died. He then entered as a private student of Professor John Eberle, and graduated M.D. at the Ohio Medical College in 1836. While studying in Cincinnati he attended a private course of lectures given by Professor S. D. Gross, then of Cincinnati. His graduating thesis was on the "relation between the blood and the vital principle."

On obtaining his degree he began practice in Aurora, where he has labored most successfully and acceptably to the close of his life. In June, 1838, Dr. Sutton was united in marriage to Miss Sarah Folbre, daughter of Charles Folbre, of Aurora. She bore him four sons and a daughter; the daughter and one son alone survives. His wife died in 1868. One of his sons, a promising physician, died in 1877. The doctor was a close observer, a careful and conscientious practitioner devoted to his profession. He was not only well read in his profession, but was learned for his oportunities beyond what would have been expected in the whole range of the sciences. Although diffident he was one of the most entertaining of men in conversation. His character, too, in every respect was of the most honorable. In the fifty years he lived as a physician in Aurora, no man has been more intimately identified with various interests of the citizens of the place than Dr. Sutton. There was no position of honor or trust within their gift which they would not have cheerfully conferred upon him. In 1862 they chose him Mayor of the city by a practically unanimous vote, and reëlected him for three times, after which he positively declined to serve as it interfered with his professional duties. When in 1866 cholera threatened to become epidemic, Dr. Sutton was by an almost unanimous voice of the city requested to serve as President of the Board of Health, and was most judicious and active in the means taken to protect the city from the disease. The doctor was a ready and vigorous writer, and early in his professional career began the contribution of articles on medicine to the journals. A paper on "Epidemic Erysipelas," or "Black Tongue," was published in the *Western Lancet*, Vol. II, 1840. The mere enumeration by title of his many papers would fill pages. A measurably complete list of these may be seen in a sketch of the doctor's life, in a work entitled "Rocky Mountain Medical Association."

Dr. Sutton was never idle, and had trained his rare natural powers for original observation, so as to be constantly in the advanced guard on all the leading questions engaging the medical profession and the scientists of the day. He was also systematic in arranging his observations and giving them freely to the press to assist others. In 1844 he was instrumental in organizing the Dearborn County Medical Society, which for a time met at his house. This Society was reorganized in 1867, and has continued in active and useful operation ever since. He made frequent and valuable contributions to the various societies to which he belonged. His papers, too, have the rare merit of being on live subjects and practical. He was also a member of the Medical Society of the State of Indiana, a constant attendant at its sessions, and its president in 1869. He became a member of the American Medical Association in 1856, attending again in 59, 67, 71, 72, 73, 74, 75, 76, 77, 81, 82, 83, 84 and 85. At the meeting in New Orleans he read an address as the president of the Rocky Mountain Medical Association, in the St. Charles Hotel, on "The Geology of the Globe and its effect upon Vegetable and Animal Life." It was a paper of rare merit and based upon much research and observation, and well worthy of publication. He was a member of the Centennial International Medical Congress which met in Philadelphia, in 1876, the Archeological Association of Indiana, Fellow of the American Association for the Advancement of Science, and an honorary member of the California State Medical Society.

Immediately after the battle of Pittsburgh Landing Dr. Sutton repaired to the scene of the conflict and tendered his professional services, and was assigned to duty on one of the hospital boats. He labored there efficiently until the emergency was passed, when he returned to his home and his larger and more responsible practice. The State of Indiana has reason to be proud of this earnest physician who for over fifty years had discharged, in a highly acceptable manner, the duties of an intelligent and learned physician, an exemplary christian, and an upright citizen.

J. M. T.

MISCELLANEOUS.

HYDROPHOBIA EXPERIMENT.—The first inoculation against hydrophobia ever done in America was performed July 5 by Dr. Valentine Mott, in the Carnegie Laboratory. Dr. Mott's patient was Harold Newell, seven years old, who was bitten by a dog presumably mad June 24. The inoculation was made from a solution of hydrophobic virus obtained by Pasteur himself from the brain of a dog dead from rabies, and transmitted by him through 110 rabbits.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, JULY 17, 1886. No. 3.

UNITED STATES ARMY MEDICAL DEPARTMENT

AN ADDRESS IN MEDICINE.

BY JOHN V. SHOEMAKER, M.D.,

OF PHILADELPHIA.

Delivered before the Thirty-seventh Annual Session of the Medical Society of Pennsylvania, held in Williamsport, Pa., June 2, 3, 4, 1886.

MR. PRESIDENT AND GENTLEMEN:—The honor which you conferred in appointing me to prepare the address on medicine for the present session carries with it great labor and serious responsibility. The ideal address on medicine should contain not only a *résumé* of the progress made and the new discoveries announced in the different branches of our science during the previous year, but it should also contain a critical examination of the statements made and the theories advanced in each department of medicine, so that the chaff can be winnowed from the wheat, and our knowledge strengthened by the addition of valuable truths and the rejection of worthless statements and visionary theories. This task, which would not be easy under any circumstances, has been increased to a formidable degree during the past four years by the overgrowth of modern specialism. Indeed specialism has developed in a comparatively short period from the necessary and legitimate consideration of diseases of the eye and ear, and one or two other organs, into a monstrous incubus which casts a shadow over every department of medicine.

It would be the height of folly to deny that all the advances in medicine are the result of clinical observation and experimentation combined with thorough investigation of the functions of the different organs of the body, and the manner in which those functions are modified in health and in disease by various therapeutic agents, but no real addition to our knowledge has been, or can be made by the purblind specialist who attributes all the ills of humanity to a derangement of the organ which he has made his study. He is the bane of modern medicine. The antidote is to let him alone severely. Not understanding or not appreciating the fact that the bond of sympathy, between every organ of the body is so close that when one is affected all of the rest suffer, he contributes little to the general fund of information, but a multitude of words which are intended to magnify himself and mystify his hearers. Emboldened by the tolerance with which he has been received, he has become so arrogant as to assume that the medical wisdom of all the ages is centered in his person, and that he is the master and not merely the supernumerary of the profession. I trust that this absurd delusion will soon be dispelled and that the practitioners of this State and country will arouse to the necessity of checking the further growth of this excrescence on the body politic.

The thoughtful, reading, busy country practitioner is fully competent to treat and cure any curable affection, and if a cure be impossible, the patient's sufferings can be alleviated, and his life prolonged just as well and as scientifically at home as in New York, Philadelphia, or Boston. The successes of the specialists are heralded to the world; their mistakes and their failures are passed over in silence. No two trees in a forest are of exactly the same size, and there are, and always will be physicians, who are preëminent among the prominent of the profession, but the assertion that there are any diseases which the general practitioner should not attempt to treat is contemptible and untrue. In fact the arrogance of modern specialism is frequently surpassed by its ignorance. It is only a short time ago since one of the most pretentious of New York specialists argued violently that the respiration in croup is slower than normal. Country practitioners who have seen children panting for air, while their respirations rose to 50, 60, 80, and 90 per minute can see from this that overbearing egotism does not always imply intellectual superiority. Many other instances might be referred to, such as exsecting a rib for an imaginary empyema, opening the gall-bladder in search of gall-stones that existed only in the mind of the operator, the barbarous and useless castration of women, and similar outrages. Suffice it to say that the columns of the current medical journals contain ample evidence of the ability of the general practitioner to meet all emergencies, and show that the claim of superior intelligence on the part of the specialist is utterly unfounded. The glory of American medicine does not rest upon the inherited qualities of any one man or set of men, but upon the learning and skill of the medical profession of the entire country.

The most practical observations on medical physiology which have appeared during the year are those of Alexander Harkin, of Belfast, in which he directed attention to the many disorders of the genital organs which are produced by congestion of the medulla oblongata. If Dr. Harkin's admirable observations on this subject were carefully studied by modern gynæcologists the present craze for castrating women would speedily subside. Dr. Harkin has also called attention to the depression of the sympathetic nerv-

ous system in cholera, and the necessity of adopting measures to counteract that depression.

Dr. Isaac Ott, of Easton, Pa., began a series of investigations some time ago to ascertain what relation the nervous system bore to the production of heat and the maintenance of the temperature of the body. These researches are not finished yet, but enough has been ascertained to indicate the existence of heat centres in the cerebrum, and that they are situated in the anterior portion of the optic thalami or in the cortex surrounding the corpora striata.

A curious case reported by M. Tarchanoff is that of a medical student who possesses the power of retarding and accelerating the beats of his heart at will.

Ewald and Boas, of Berlin, have made a series of investigations of the process of digestion; as the result of which they state that stomachic digestion consists of three stages; during the first stage, which lasts half an hour, the gastric juice contains lactic acid; in the second stage, occupying from half an hour to an hour, both lactic and hydrochloric acids are present; during the third stage, consuming an hour or an hour and a half, hydrochloric acid is the only acid present.

The field of bacterial investigation is still being diligently worked, but no very practical results have yet been arrived at. Virchow acknowledges the importance of this subject, but justly deprecates the folly of assigning a bacterial origin to all maladies, and believes that the day of the cells will soon come again. The subject of ptomaines has also received considerable attention. The poison of decaying cheese has been isolated by Dr. Vaughan and termed tyrotoxicon.

The theory that the poison of cholera acts primarily on the mucous membrane of the intestinal canal and secondarily upon the sympathetic nervous system has gained many adherents during the past year. The treatment based upon this theory consists in the addition of dilute sulphuric acid to all drinking water as a prophylactic measure, and in the administration in the early stages of the disease of large doses of calomel or ipecachuana in order to produce a free outflow of bile into the intestinal tract, the biliary secretion being destructive to all forms of low organisms. In the second stage the depression of the sympathetic nervous system can be most effectually counteracted by the administration of atropia, strychnia, and capsicum. Dr. Harkin has obtained brilliant results from the application of blisters over the course of the upper portion of the pneumogastric nerve in severe cases of cholera morbus, and earnestly urges a trial of the same measure in true cholera. Dr. W. B. Ryan, of Indiana, has directed the attention of the profession to belladonna or its alkaloid, atropia, in the treatment of cholera infantum. As this disease does not differ materially either in etiology or symptomatology from the cholera morbus, and sporadic cholera of adults, there can be no doubt of the value of belladonna in its management. Dr. Ryan is certainly entitled to our warmest gratitude for presenting the profession with an effective remedy for this dreaded disease of infantile life. The prevention of cholera infantum is of even more importance than its successful treatment. The best prophylactic measure is frequent bathing of the entire surface with cold water. Attention to the diet is also of prime importance, but unless the effects of the excessive summer heat be counteracted by the free use of cold water great mortality will ensue. After an attack of cholera infantum has been fully developed cold bathing will still be found beneficial, and in many cases indispensable.

Dr. J. J. Mulheron, of Detroit, has truly said that "Baths hold an important place in the treatment of the fever of cholera infantum. The soothing influence of a cold bath on a child whose temperature has reached 103° F., and the increased activity of the drugs administered after the bath, need but to be witnessed to make converts to this much neglected remedy in the treatment of cholera infantum. The child should be immersed up to the neck in water at a temperature of 95 F., to which cold water should be added until the bath reaches 70 F. or even lower, the condition of the patient, his temperature, etc., being the guide to the reduction. No hard-and-fast rules can be laid down to govern the temperature of the bath or its frequency; the condition of the infant must be the guide which the good sense of the physician must be trusted to interpret and follow."

Several articles have been published during the past year in reference to the hypodermic use of antipyrin in the treatment of sunstroke or thermic fever. The results do not appear to justify its further employment. Sunstroke can be averted by drinking freely of cold water and avoiding excessive exertion during the heated term. If an attack supervenes the best remedies are free ventilation and the copious external application of cold water. If the pulse be full and bounding, venesection may be resorted to with advantage or aconite may be administered hypodermically.

Dr. H. C. Wood has observed a number of cases of lead poisoning, in which the true nature of the malady was not suspected for a long time, and urges that a careful examination of the urine should be made for lead in all obscure cases of long standing. In connection with this subject it may be stated that Dr. W. S. Janney believes that, in our climate, few, if any cases of cholera morbus occurring in persons not previously debilitated will terminate fatally, and that many of the deaths which are attributed to that disease, are in reality due to the secret administration of a vegetable or a mineral poison.

Dr. Pavy has directed attention to the fact that the presence of albumen in the urine unaccompanied with other symptoms does not necessarily imply a diseased condition of the kidneys. There are many persons whose urine becomes albuminous whenever the blood-pressure is increased as by exercise, mental strain, or a heavy meal, but the albumen disappears in a few hours and the general health remains entirely unaffected. Small quantities of sugar may also appear in the urine occasionally without possessing any special significance.

Several writers in this country and in England have claimed that the relationship between quinsy and rheumatism is so close that practically speaking the former may be defined to be a localized rheumatic

inflammation of the tonsils. In proof of this they point to the fact that the majority of cases of quinsy occur during cold, damp weather, and are benefited by the salicylates and alkalies. This argument is ingenious but not convincing. The salicylates and alkalies are beneficial in quinsy because of their sedative and derivative antiphlogistic action, and not because of their antagonism to an imaginary rheumatic etiological factor. Far better results can be obtained moreover by the administration of aconite and guaiac in doses sufficient to produce free diaphoresis and a decided reduction in the force and frequency of the cardiac movements.

Pulmonary syphilis has received considerable attention, but not as much as its frequency and its importance deserve. The principal diagnostic points by which it can be differentiated from pulmonary tuberculosis are the history of a specific infection, the dry, irritating character of the cough, the absence or insignificant character of the râles, the absence or infrequent occurrence of hæmoptysis, the normal appearance of the chest notwithstanding the large area of induration, the substernal tenderness, the thickening of the tibia and clavicles, the absence of bacilli from the sputa, and finally, the absence of severe febrile symptoms; the temperature usually remaining about normal and rarely rising above 101 or 102 until late in the course of the disease. Improvement rapidly follows the internal administration of mercury and potassium iodide. In cerebral syphilis the most effective results can be obtained from mercury used hypodermatically or by inunctions, as by either of these methods the system can be more quickly impressed with the remedy.

Dr. Wilkinson has directed attention to the value of hypodermic injections of carbolic acid in carbuncle. Drs. Schuppert, Stewart, and Woodbury, in a series of valuable articles, have insisted upon the necessity of recognizing the difference between tetanus and tetany. The prognosis in the latter disease is almost always favorable while in the former recovery is rare. Tetanus is almost invariably a complication of a pre-existing wound or injury, while the so-called idiopathic tetanus is not true tetanus, but tetany. In tetanus the muscles of the jaws and trunk are primarily involved, in tetany they are not affected at all or only secondarily, the spasmodic contractions being usually limited to the muscles of the extremities. In tetanus the pain is agonizing, while in tetany it is comparatively slight.

The treatment of acute and chronic alcoholism by large doses of nux vomica or its alkaloid, strychnia, has been employed by many American and European practitioners with uniformly gratifying results.

The difficulty of making a diagnosis of gastric ulcer has been painfully illustrated in several cases, occurring recently in Philadelphia, in which the existence of this lesion was not suspected until actual perforation of the stomach took place followed by violent peritonitis and death. No blame can be attached to the attending physicians, for there were no symptoms indicative of the disease until medical aid was useless. It would be well, however, to bear these cases in mind when consulted for vague gastric symptoms, and to test the effect of the dietetic and therapeutic treatment appropriate for ulceration of the stomach, if other measures do not give prompt relief.

The neurotic treatment of coryza has been enthusiastically advocated by Dr. Lees, of London. This treatment consists of the administration of belladonna and bromide of potassium and the local application of cocaine, and is admirably adapted to those cases which are produced by exposure to cold and dampness. The epidemic cases, however, which are assumed to be due to minute bacteria can be more effectually treated by the use of large doses of quinine, from three to ten grains three times daily. Dr. Davidson, of Georgia, has directed attention to the value of the hypodermic administration of nux vomica in the treatment of opium poisoning, and Dr. O'Daniels, of the same State, has obtained the most gratifying results from phytolacca decandra in the treatment of orchitis.

While no brilliant discovery like that of cocaine has been made in the field of therapeutic research since our last meeting, several valuable additions have been made to our armamentarium and our confidence in many older agents has been increased. Alveloz, a South American remedy for cancer, has been tested in a few cases with apparently good results. The pain has been mitigated, the discharge lessened, the fetor removed, and the ulcerative process checked. Dr. Smith Townsend has reported a case of lupus of the face of forty years' standing which had resisted all previous treatment but was cured by a few applications of alveloz.

Kairin and antipyrin have been found to be prompt antipyretics. Unfortunately the reduction of temperature which they produce is of brief duration and is frequently accompanied by the most alarming symptoms of depression. In one case fatal collapse ensued; the judicious practitioner will avoid their use for the present and rely upon aconite, quinine, salicylate of soda, oily inunctions, and cold affusions. The safest and most efficient antipyretic is cold water applied either in the form of cold baths, sponge baths, or the wet-pack. It must be remembered, however, that the fever does not constitute the whole disease, and that heroic antipyretic measures are not indicated when the temperature does not exceed 103° F.

A process, termed pneumatic differentiation, has been introduced as a panacea for all pulmonary affections, and a number of elaborate articles have been published in commendation of it in various medical journals. A company has been formed to manufacture pneumatic cabinets, and the announcement is made that the cabinets will be rented to reputable physicians for the modest sum of $250 a year. The cabinet is practically an air-tight box in which the patient sits while a slightly greater quantity of air is forced into his lungs than he usually inspires. Some benefit naturally follows this increased admission of oxygen into the circulation, but greater benefit can be obtained by simply directing the patient to habitually breathe fully, slowly, and deeply while pursuing his ordinary avocation.

The peroxide of hydrogen, which is simply water impregnated with an excess of oxygen, has been found

to be a valuable antiseptic when used as an injection in leucorrhœa, gonorrhœa, cystitis and otorrhœa, and as a local application in diphtheria, foul ulcers, and fistulous tracts.

Antiseptic inhalations have long been used with benefit in whooping cough and bronchorrhœa as well as in phthisis. Among those which are now regarded as especially valuable are inhalations of creosote, turpentine, iodine, eucalyptus, benzoic acid, and carbolic acid.

Rhus aromatica, which was recommended years ago by Dr. N. S. Davis as a valuable remedy for incontinence of urine, is now coming into general use for that annoying complaint.

M. Caulet has directed attention to the value of the cold foot bath in insomnia and the various disorders dependent upon cerebral congestion.

Thallin, which was introduced as the ideal antipyretic, has been found to be more unreliable and dangerous than either antipyrin or kairin.

Syzygium jambolanum (jambol) has been recommended as a specific for diabetes. Clacius employed it in several cases, all of which exhibited marked improvement in a very short time, but further trial will be necessary to determine its value.

Jamaica dog-wood (piscidia erythrina) has been found to be a valuable sedative and hypnotic, and has the advantage of not being followed by constipation and nervous depression.

Hypnone and urethan also possess valuable hypnotic qualities, but their poisonous action upon the lower animals demands caution in their employment upon man.

Cascara sagrada has been ascertained to be an efficient tonic and laxative. It promotes the appetite, assists digestion, and overcomes constipation without producing any unpleasant effects whatever, and deserves to be admitted to the U. S. Pharmacopœia.

Dr. F. T. Paine has directed attention to the value of salix nigra in ovarian neuralgia, dysmenorrhœa, and all irritative conditions of the genito-urinary organs.

Dr. Tovar, of Cuba, has stated that parthenine, the active constituent of partheninum hysterophorus, possess marked value as an antipyretic and antiperiodic. The plant is used by the natives of Cuba as a substitute for quinine, to which it appears to be only slightly inferior. Its qualities deserve further investigation.

According to Korab and others, helenina, the active principle of inula helenium (elecampane) is a powerful antiseptic. A few drops of the solution of helenina immediately killed the organisms in ordinary infusions and proved fatal to the bacilli of tuberculosis.

It is recommended in cholera, cholera-infantum, malarial fever, and all the zymotic diseases, and may be substituted with advantage for carbolic acid in all preparations for external use.

Hyoscine has been thoroughly investigated by Dr. H. C. Wood and others, and found to be a potent sedative and hypnotic, and invaluable in the treatment of many disorders of the nervous system. As its action is prompt, and the susceptibility of individuals varies, the initial dose should not exceed gr. $\frac{1}{96}$.

Hamamelis virginiana has been somewhat neglected by American therapeutists, but European physicians who have employed it believe it to be without a superior as an astringent and hæmostatic. It has been used with remarkable benefit in menorrhagia, hæmoptysis, hæmophilia, intestinal hæmorrhage, painful hæmorrhoids, purpura and varicose veins.

Nitro-glycerine has retained its position as the remedy *par excellence* for angina pectoris and chronic interstitial nephritis. It is also effective in the treatment of shock, opium poisoning, cardiac asthma, cereberal hæmorrhage and in failure of the heart's action during the administration of chloroform.

Strophanthus hispidus, a new remedy which has been introduced by Prof. T. R. Fraser, promises to take the first rank as a cardiac tonic and stimulant.

According to M. Germain Sée, Sparteine, the active principle of spartium scoparium, the ordinary broom-plant, is also a powerful cardiac tonic similar to digitalis and convallaria, but more prompt in its action and more durable in its effects. Broom has long been known to be a valuable tonic diuretic. Liebrich, to whom we are indebted for the discovery of chloral, has called attention to the value of lanolin as a basis for ointments. Lanolin is an animal fat derived from wool and other keratin bearing tissues. It is not a panacea. It will not answer to employ it in all cases of skin disease, but it is readily absorbed, and possesses many advantages over the materials ordinarily employed as the basis for ointments. Lewinin, a resinous extract obtained from the root of piper methysticum, has been ascertained to be a local anæsthetic of considerable value but not equal to cocaine. Hydrastis and its alkaloid, hydrastine, have been employed in dyspepsia, melancholia, neurasthenia, and various forms of skin diseases with beneficial results. Rothe has ascertained that urtica dioica, the stinging nettle, possesses valuable hæmostatic properties. Boldo has been tested by several distinguished French clinicians and found to be a valuable hypnotic and soporific. Pyridine, one of the constituents of tobacco smoke, has been introduced for the treatment of asthma, but does not seem to possess any advantages over the remedies usually employed.

Terebene, a derivative of oil of turpentine, has been investigated by Murrell and found to be especially valuable in the treatment of winter cough, bronchorrhœa, and other forms of sub-acute and chronic bronchitis. It appears to have a sedative as well as a stimulating effect upon the mucous membrane of the respiratory tract, allaying irritation and assisting expectoration.

Attention has been directed to the value of osmic acid administered hypodermically in obstinate cases of sciatica. Sedum acre has been employed in diphtheria with apparent benefit. Ichthyol has been found effective as a local application in chronic eczema and psoriasis, pruritus, and acute and chronic rheumatism. Its value is due to the large percentage of sulphur which it contains.

Euphorbia pilulifera has been recommended for asthma. Salicylic acid has been found useful in the treatment of diarrhœa. Large doses of sulphur have

been asserted to be curative in dysentery. Caffeine has been thoroughly studied, and is believed to be but little, if at all inferior to digitalis as a diuretic and cardiac stimulant. Its effects are less durable, but its action is more prompt and devoid of the dangers of digitalis. Renewed attention has been given to the subject of lavage in various gastric disorders and to the efficacy of oxalate of cerium in large doses as a gastric sedative. Arsenic has been found to be of especial value in the treatment of pernicious anæmia and other wasting diseases.

The subject of dietetics has attracted considerable attention during the past year and will receive far more in the future. Improper or unsuitable food is the most potent factor in the production and maintenance of many morbid conditions, and while temporary benefit can be obtained by the administration of medicines, no lasting cure can be effected until the exciting cause is removed. It does not require the gift of prophecy to foretell that in the near future dietetics and hygiene will be the watchwords of preventive medicine, and dietetics and therapeutics those of practical medicine.

It is impossible for me to close this address without deploring the loss which the American medical profession has sustained in the death of Dr. Austin Flint, Sr. Preëminent as a writer, teacher, and practitioner of medicine; acknowledged without a dissenting voice to be the greatest of American physicians, he bore his honors modestly, and never arrogantly asserted his superiority or used his great authority to the disadvantage of the humblest of his professional brethren. Kind of heart, studious of disposition, refined in conversation, gentle and magnanimous in character, faithful to the American Medical Association to the end, he passed away surrounded by love, honor, and scores of friends; but his work lives after him, and his spirit is with us still. For as Longfellow has beautifully said:

"Were a star quenched on high,
For ages would its light
Stream downward from the sky
Upon our mortal sight.

"So when a great man dies;
For years beyond our ken
The light he leaves behind him lies
Upon the paths of men."

ORIGINAL ARTICLES.

ELECTROLYSIS IN GYNECOLOGY; WITH A REPORT OF THREE CASES OF FIBROID TUMOR SUCCESSFULLY TREATED BY THE METHOD (WITH DISCUSSION).[1]

BY FRANKLIN H. MARTIN, M.D.,
OF CHICAGO.
PROFESSOR OF GYNECOLOGY IN CHICAGO POLICLINIC; FELLOW OF THE CHICAGO GYNECOLOGICAL SOCIETY, ETC.

Electrolysis is the power of resolving compound bodies into their constituent elements by passing through them a current of electricity. The constituent elements or *ions* of a body or *electrolyte* so divided, have a general tendency to arrange themselves around either pole of the battery—the *anions* going to the positive and the *cations* to the negative. Electrolysis only occurs in that part of the body which is in a fluid state. We know that if a galvanic current be passed through water, the element oxygen is attracted by the positive, and the hydrogen by the negative pole. The theory of electrolysis is: In every compound one of the elements (the one attracted by the positive pole) is electro-negative, the other the electro-positive. If a molecule next the positive electrode be decomposed, the electro-negative constituent of the molecule is attracted by that pole, thereby setting free the electro-positive constituent, which immediately grasps and combines with the electro-negative element of the next molecule, and so on, until every molecule has been similarly acted upon in the line of the current.

This is the theory. While this is true, we find that besides this simple "change of position," as Clausius calls it, we have a direct transference of fluid particles in the direction of the galvanic current. This phenomenon of direct transference was called by Du-Bois Reymond the cataphoric action of the constant current. This action can be demonstrated in a simple way by placing the electrodes of a galvanic battery in two compartments of a fluid, separated by a porous septum, when it will be seen that the fluid particles pass in the direction of the galvanic current, from the + to the — pole, and the fluid in one half of the dish will increase at the expense of the other half. It is by this action that dissolved substances are introduced through the skin by means of electricity.

Thus briefly and imperfectly I have stated the principle of electrolysis as it is observed in a fluid. When it is remembered that from one-half to two-thirds in bulk of all the soft tissues of the body is water, we can readily see how perfectly electrolysis can be accomplished in the various tissues. While the galvanic current passed through a soft living tissue has not an uninterrupted fluid medium, it has practically a fluid medium divided into innumerable little compartments, each one separated from the other by a thin wall of solid. During the passage of the current each of these particles of solids acts as a positive electrode on the fluid between it and the next solid particle in front, and as a negative electrode upon the fluid between it and the solid particle behind it. Each molecule of fluid in a conducting solid, therefore, in the line of a galvanic current becomes electrolysized. It is found, also, in passing a galvanic current through a portion of the soft tissues of the body, that there is considerable tendency to a cataphoric action. That occurs by a direct transference of the fluid particles through the little permeable walls of solid in the direction of the negative pole of the battery. Thus we find the effect of electrolysis on a portion of soft fresh tissue to be: 1. A separation of the combined elements (more or less) into their constituent elements, and a rearrangement of

[1] Read in the Section of Obstetrics and Diseases of Women at the Thirty-Seventh Annual Meeting of the American Medical Association, May 5, 1886.

the same. 2. A general movement of elements in solution toward the negative pole of the battery.

Now, by a little ingenuity can we not readily explain how absorption is promoted by the process of electrolysis when applied to living normal tissue? A moderate galvanic current is passed through a part, and the most susceptible molecules in the course of the current become broken into their original elements: 1. These elements immediately make a similar or different combination with neighboring elements of opposite electrical tendencies, making thereby new compounds which act as foreign particles; as foreign bodies they are promptly removed by the nearest absorbent. 2. Other elements, as they become free from their original molecules, make combinations with elements which are already leaving the tissues through one of their innumerable minute vascular or absorbent canals. 3. Many, in the form of gas, pour into the atmosphere beneath and surrounding the electrodes. 4. Others attack the electrodes and are disposed of in form of deposit on their surfaces. 5. The current by its cataphoric action, that is, by its direct transference of fluid particles in the direction of the negative pole, produces an engorgement of the tissues at the negative side of the part acted upon. The absorbents in that portion of the tissue will promptly make an effort to establish an equilibrium, and by a direct action of endosmosis they are filled and the excess is carried away in their current. This is what takes place in normal tissue, when the galvanic current is passed through it.

A similar change is produced in pathological tissues alone, or in pathological tissues incorporated with normal tissues. The ultimate effect, however, on the two tissues of repeated electrolysis is different, because of the constant effort upon the part of non-pathological or normal tissue to repair itself, and the inability, with a few exceptions, of pathological tissue to do so.

The successful use of electrolysis in medicine and surgery, then, must be based upon the fact that pathological material is not replaced after absorption is accomplished, as is normal tissue, unless its *cause* is *still acting* or is *again brought* into action. The practical application of these principles of electrolysis opens a large field for electro-therapeutics.

Therapeutical Applications.—With a rational knowledge of the simple principles given above, the air of mystery surrounding the beneficial results obtained from electrolysis immediately disappears. It is not necessary, however, to base our faith on theoretical grounds alone, because we have a substantial line of historical clinical evidence that perfectly accords with it. While it is not my purpose in this paper to give a complete *résumé* of electrolysis in surgery and medicine, I cannot refrain from mentioning a few of its most prominent advocates as additional proof of its efficacy. I am indebted to Dr. Robert Newman, of New York, for much valuable literature on this subject.

Historical.—Aneurisms were reported cured by Petraquin[1] as early as 1845. Since 1875 by Bowditch,[2] Chauselle, Dujardin-Beaumetz, Laurent Robin,[3] Sands, Sevir, Pepper, Keyes, Heath, Francesco Brancaccio[4] and others.

Varicoceles have been reported cured by Dr. Robert Newman, of New York.

"Polypi, nævi, sebaceous tumors, and similar new formations, are promptly cured by electrolysis," says Bartholow. Nævi and port-wine marks are also reported cured by Beard;[5] also by Hardaway, of St. Louis.

Subcutaneous erectile tumors have been treated with success by W. T. Hutchinson, of Providence.[6]

Ganglions have been cured by galvano-puncture by Dr. David Prince, of Jacksonville, Ill.

Epilation by electrolysis has been successfully accomplished by G. H. Fox,[7] C. Heitzman and A. D. Rockwell,[8] of New York.

Hydrocele has been reported cured by Althaus, Frank,[9] Rodolfi,[10] Erhardt[11] and Bartholow.[12]

Extra-uterine pregnancy has a record for electrolysis. E. G. Lander,[13] T. Gaillard Thomas,[14] Paul F. Mundé and A. D. Rockwell have succeeded in destroying the fœtus by the use of galvanism.

In bronchoceles of the cystic variety cures are reported by Amussat,[15] Ultzman,[16] Smith[17] and Althaus.[18] Of the solid variety cures have been reported by Wahltück,[19] A. D. Rockwell,[20] and J. T. Everett.[21] Morrell Mackenzie also reported nine cases cured out of thirteen bronchoceles with electrolysis.

Ovarian cysts have been reported cured by Van Ehrenstein, Clemens,[22] Schmelder,[23] Vanderveer[24] and Mundé.[25]

The radical cure of hernia by electrolysis has been accomplished by Dr. J. Craft, of Cleveland, O., and reported by Dr. Robert Newman, of New York.[26] After the hernia is reduced he causes a sealing-up of the inguinal canal by inserting a positive needle electrode, properly insulated except at the point, between the internal and external ring, and allowing a sufficient current to pass to excite adhesive inflammation.

Hæmorrhoids also have been cured by Dr. Craft by coagulating the contents by insertion of the positive needle electrode, or by absorption by inserting a negative needle electrode properly insulated except at point.

Epitheliomata have been cured by Robert New-

---

[1] Bulletin Gén. de Thérap., vol. xxxi.

[2] Boston Med. and Surg. Journal, No. 2, 1876.

[3] Robin. De l'Electro-poncteur dans la Cure des Anévrysmer Intra-thoracique, 1880.

[4] Rèvista Internaz. di Med. e Chir, 1884.

[5] Beard in Archives of Elect. and Neurology, vol ii, No. 1.

[6] Archives Electrol. and Neurol., vol. ii, No. 1.

[7] New York Med. Record, March 22, 1879.

[8] Ibid, October 13, 1883.

[9] Archiv. Electrol. and Neurol., vol. i, No. 21.

[10] Practitioner, September, 1873.

[11] Allgem. medic. Central-Zeitung, 99, 1874.

[12] Medical Electricity, 1881.

[13] Medical News, April 8, 1882.

[14] American Journal of Obstetrics, vol. xviii, p. 86.

[15] Bull. Gén. de Thérap., October 15, 1872.

[16] Wiener Med. Presse, Nos. 42, 26, 1876.

[17] Med. Record, August 7, 1875.

[18] Brit. Med. Jour., vol. ii, 1875.

[19] Med. Times and Gazette, January 28, 1879.

[20] Med. Record, January 17, 1884

[21] New York Med. Journal, April 18, 1885.

[22] Deutsch. Klinik, Nos. 26, 27, 1875.

[23] Wiener Med. Presse, Nos. 50, 52, 1876.

[24] Trans. Med. Soc. State of New York, 1878.

[25] American Gynecological Trans., vol. ii, 1877.

[26] Gaillard's Med. Journal, December, 1885.

man,[27] A. D. Rockwell,[28] W. H. Massey[29] and Neftel.[30]

Uterine fibroids have been successfully treated by Dr. Mesière, of Paris, who reported at the International Medical Congress at Copenhagen marvelous results in six cases by the use of electro-puncture. Dr. Apostoli, of Paris, reported at the same Congress the result of two years' treatment upon over 100 cases in which he had succeeded in reducing the size of the tumors and uteri, and completely restoring the patients. J. T. Everett,[31] of Clyde, O., also reports successes in the treatment of these growths. Dr. J. N. Freeman,[32] of Brooklyn, reported three successful cases by the method of electro-puncture. I am, myself, at present able to report the successful removal of two interstitial fibroids of well-marked dimensions, and the gradual diminution of a large subperitoneal fibroid which is still under observation. I will mention in detail these cases in another part of this paper.

Strictures in different parts of the body have done more toward developing electrolysis as a therapeutic measure than all other pathological conditions. Strictures of the nasal canal have been reported relieved. The lachrymal canal has been successfully dilated. M. J. Mercie[33] and M. Mercier[34] each report successful cures of dilation of the Eustachian tube by electrolysis.

Œsophageal strictures yield to electrolysis. Professor Hjorth, of Christiania, reported an interesting case at the last International Medical Congress.[35] Frank, Butler and Prince also report successes. Female urethral strictures have been cured by Dr. Robert Newman.[36] Rectal strictures have also been cured by the same operator.[37] In regard to strictures of the male urethra, if all of the foregoing record fails to convince of the therapeutical and surgical value of electrolysis, the many valuable clinical reports of cure of stricture of the male urethra, by eminent men, can surely leave no doubt in the mind of the most incredulous.

Electrolysis was first used in strictures by Cussel, and subsequently by Millebrand and Werthemer.[38] The first recognized work of importance in urethral strictures was done by Mallez and Trepier.[39] Dr. Robert Newman,[40] the veteran of electrolytic treatment in America, and to whom we owe more than to any other *one* man for the successful development of this method, was at work as early as 1867, and reported results in the *Medical Record* as early as March of that year. From that time to this Dr. Newman has worked, and gradually improved his methods until he is now able to report over 100 cases of permanently cured strictures; that number having been under observation long enough since treatment to warrant the statement "permanent cures." Besides the work of Dr. Newman, much successful work is represented by the reports of F. T. Frank, D. Prince, John Butler, Mynter, Benson, A. T. Douglas, G. C. H. Meier,[41] W. H. Dukeman,[42] J. H. Glass,[43] W. T. Belfield[44] and others. My experience in treatment of urethral strictures with electrolysis is limited to two successful cases.

Thus, briefly, I have given a summary of what has been done in many directions by the rational application of electrolysis. While the object of this paper deters me from going more fully into the details of the general subject, it presents much of great interest and value.

My experience with electrolysis, with the exception of the two cases already mentioned of stricture of the urethra, has been confined to gynecological practice. I have worked on the principles enlarged upon in the first part of this paper, viz.: 1. That a galvanic current of moderate quantity passed through a soft tissue of the body produces electrolytic action all along its course. 2. That a process of rapid absorption is produced in the parts so acted upon. 3. That the normal tissues, while the least susceptible to the current, and therefore least liable to be chemically decomposed, are, *if decomposed* and absorbed, almost immediately replaced by the inherent property of healthy tissue to repair itself. 4. That pathological tissue is usually of lower vitality than normal tissue, is more easily decomposed by the current, and when *it is decomposed* and its absorption accomplished it has not the power to reproduce itself.

The Battery.—The battery used for electrolysis must be one arranged for intensity rather than quantity. The Bunsen elements of zinc and carbon give the best satisfaction. The fluid should be weak, composed of diluted sulphuric acid and bichromate of potash. The current should be steady. Because of the small quantity of electricity generated by the small cells (great intensity only being necessary), the patient's limit of toleration can be reached without danger of a sponge electrode cauterizing if the battery be in proper order. Of the selection of electrodes I will speak, as the different indications arise, in detailing cases.

The pathological conditions which I wish to discuss, and in which I have received marked beneficial results, and not a few cures, will be included under the following headings:

1. Chronic Cellulitis and Peritonitis.
2. Chronic Ovaritis and Salpingitis.
3. Chronic Subinvolution of Uterus.
4. Chronic Hyperplasia Uteri.
5. Uterine Stenosis.
6. Laceration of Cervix Uteri.
7. Ovarian Cysts.
8. Peri Uterine Hæmatocele.
9. Uterine Fibroids.

1. *Chronic Cellulitis and Peritonitis.*—Under this head I wish to consider all conditions in which in-

[27] Medical Record, December 24, 1881.
[28] Med. Record, January 19, 1884.
[29] Trans. Amer. Med. Assoc., 1872.
[30] Virchow's Archiv., vol. lxx, p. 171.
[31] New York Med. Journal, April 18, 1885.
[32] Ibid, March 7, 1885.
[33] Medical News, March, 1883, p. 117.
[34] Académie of Médicine.
[35] Newman's "Progress of Electrolysis in Surgery."
[36] Amer. Journal of the Med. Sciences, October, 1875.
[37] New England Medical Monthly.
[38] Beard and Rockwell's "Medical and Surgical Electricity."
[39] De la Guérison durable des Rétrecissement de l'Urethre, par la Galvano-Caustique Chimique. Paris, 1877.
[40] New York Med. Record, March, 1867; August 12, 19, 1882; Trans. Med. Soc. State of New York, 1874; JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, April 25, 1885; New England Medical Monthly, August, 1885.
[41] New York Medical Record, August 16, 1884.
[42] Ibid, January 5, 1884.
[43] Ibid, May 12, 1883.
[44] Paper read before Chicago Medical Society, April 19, 1886.

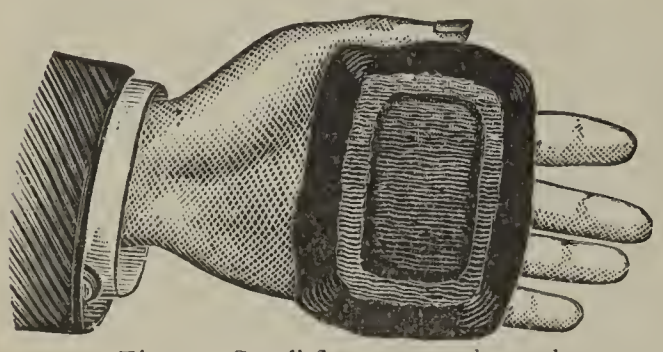


Fig. 1. Small flat sponge electrode.

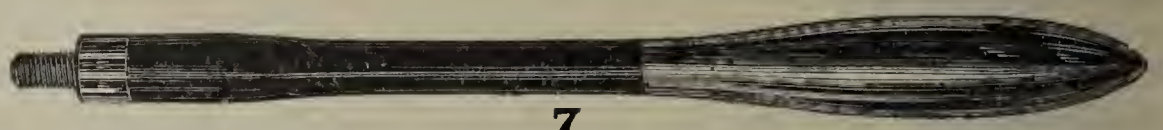


Fig. 2 a.

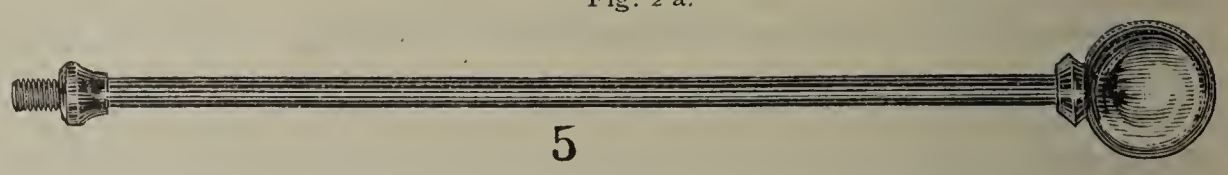


Fig. 2 b. Rectal electrode, straight and ball.

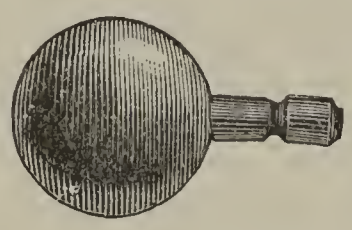


Fig. 3 a. Vaginal electrode, straight and ball.

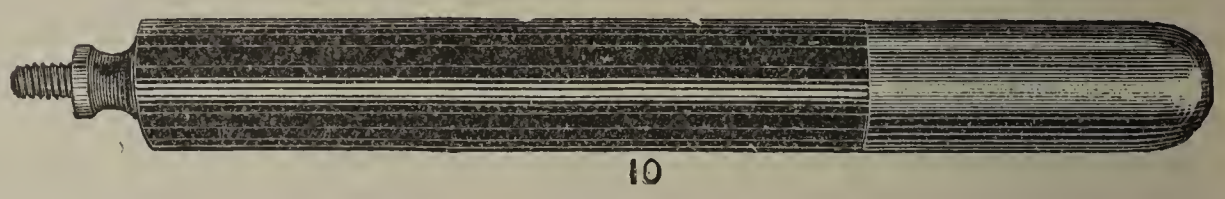


Fig. 3 b.

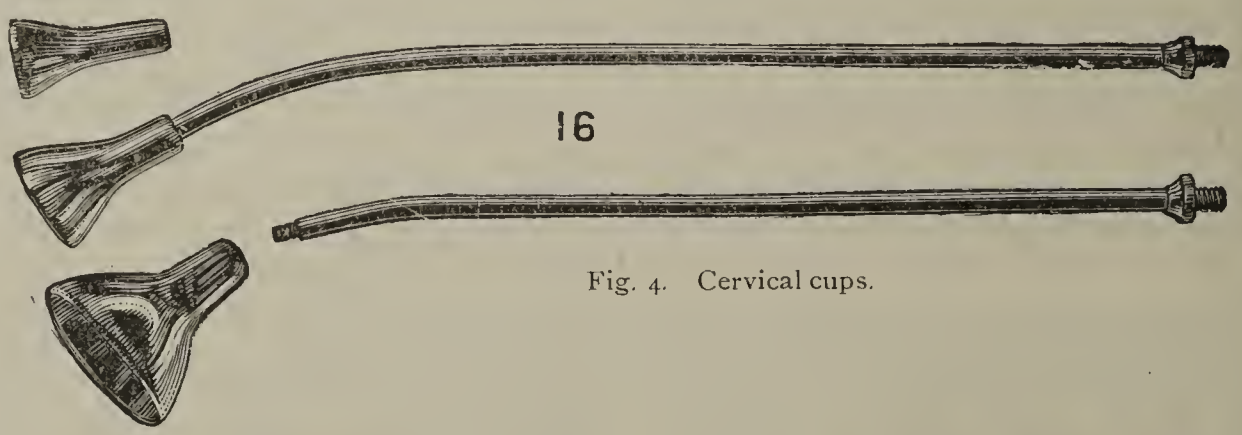


Fig. 4. Cervical cups.

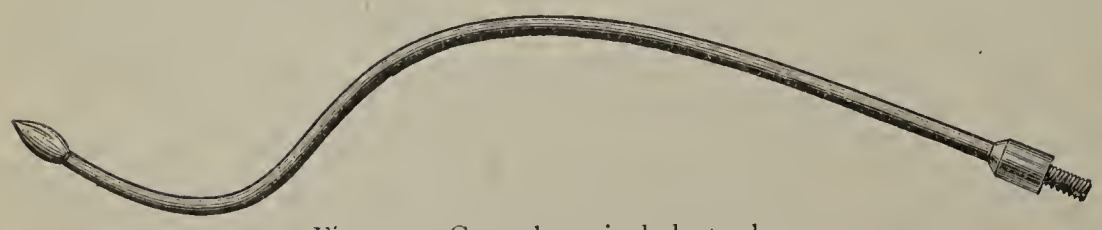


Fig. 5 a. Curved cervical electrode.

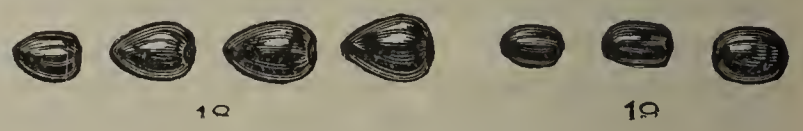
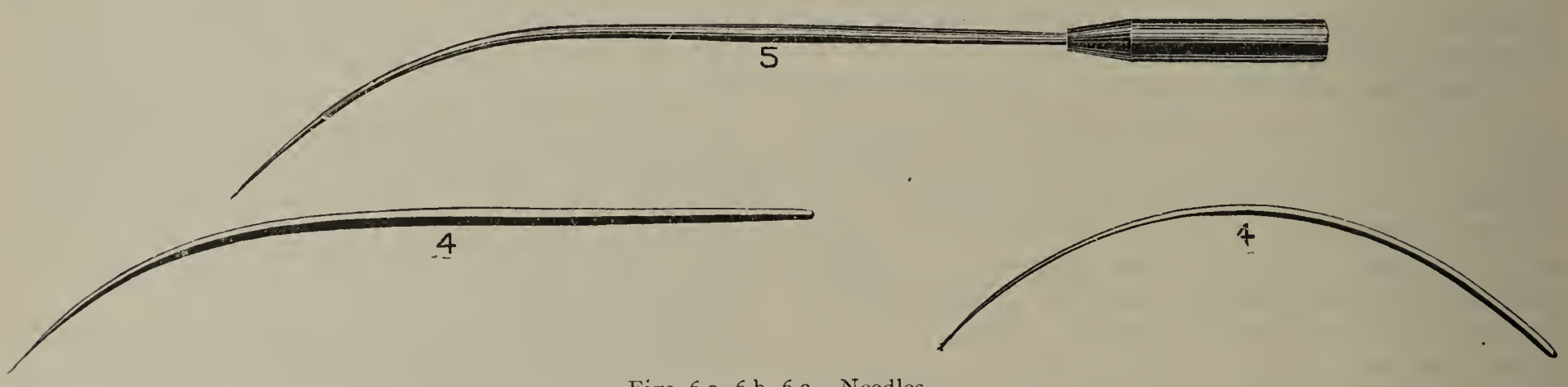


Fig. 5 b. Cervical tips.



Figs. 6 a, 6 b, 6 c. Needles.

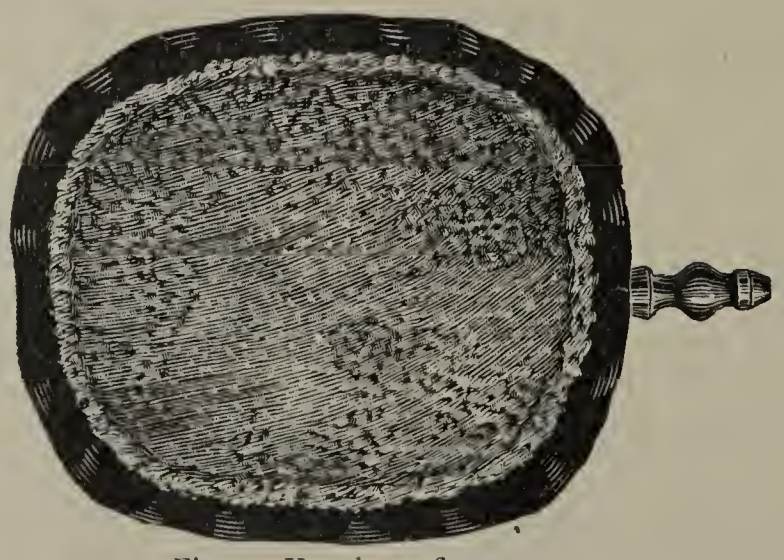


Fig. 7. Very large flat sponge.

flammatory exudates have been deposited in the female pelvis anywhere, caused by a general or local peritonitis, perimetritis, parametritis, or inflammation of the cellular tissue surrounding the uterus and vagina, or in the broad ligaments. Under this head we meet with some of the most aggravating difficulties that the gynecologist is called upon to treat. Among the objective symptoms we find: Hardened, thickened condition of the anterior or posterior wall of the vagina; thickened deposits in Douglas's cul-de-sac limiting the movements of the cervix; thickened masses between the anterior portion of the cervix and the bladder, with adhesions; thick inflammatory masses latterly between the folds of the broad ligaments, displacing the uterus and interfering with its motion; and in many cases we have a general thickening on all sides with an immovable womb and tenderness in every direction. The subjective symptoms accompanying these various conditions are as varied as the objective. Besides the many local symptoms, we may have any or all of the organs of the body controlled by the sympathetic nervous system, involved in a sympathetic distress. The local symptoms include all forms of distress that may arise from interference with the functions of the pelvic organs. Constipation, sacralgia, dysuria, dysmenorrhœa, together with acute neuralgias in regions where twigs of nerves and sensitive nerve-ganglia are imprisoned in the inflammatory exudates.

While one or more of these multiform conditions are met with almost every day, we are almost helpless in our efforts to remove these inflammatory deposits and thickenings after they have become organized. True, we can promote absorption slowly, by the use of hot water, iodine, glycerine, massage, etc., and in cases of small deposits we may get absolute cures. It is in just these cases that electrolysis is indicated. Electrolysis, if properly managed, will promote the absorption of these exudates very rapidly, and in my hands has been the means of relieving a great many very severe symptoms together with their cause. I have a number of cases which properly come under this head, that I have treated with beneficial results, in not only relieving the symptoms for which I was consulted, but in which I also removed the inflammatory deposits. I will give the history of but one in detail, this one being a fair representative of the others.

Case 1.—K. D., aged 20; unmarried. Commenced menstruating at 14. Menstruation was painful from the beginning, and became gradually more painful as she grew older, until she consulted a physician. This was in her 18th year. While under treatment at this time she was taken suddenly ill with severe pain, and was obliged to remain in bed for some days. Before recovering from this acute attack she stopped treatment; was better of her menstrual difficulty, but was troubled with a great deal of soreness in the pelvis. This gradually left her. Her menstrual trouble gradually reappeared. Has had difficulty in passing water—frequent urinating with much pain. Has for some time been troubled in walking; has to bend forward when walking. Constipated; bowels have not moved for some time without medicine. Almost constant backache. Cannot get rest in recumbent position. Almost constant "bearing down" pain night and day. Menstruation very painful, and pain continues all through the flow.

On local examination the external parts were found normal. Lower end of vagina large for a virgin; upper end contracted and hard. Cervix long and immovable at vaginal attachment. Pressure in vaginal vault gives cartilaginous feel with much tenderness. The whole upper part of the vagina is stiff, with uterus almost immovable. By bimanual manipulation the fundus is located in Douglas's cul-de-sac, and only slightly movable. Slight tenderness in ovarian region. Rectal examination shows considerable thickening of its anterior wall. Probe passed with difficulty into uterine canal, and took a backward course.

In this case there seemed to be a general adhesion of all the organs of the pelvis into one immovable mass. It was as though a liquid material had been poured on to the peritoneal surface of the pelvic organs, and after filling all the spaces between the organs had hardened. The patient was well nourished. She suffered excruciating pains while on her feet, and was far from being free from pain when lying down.

With the exception of the hot water vaginal douche, which the patient was using when she consulted me, I gave her no treatment except with the galvanic current. The treatment was applied in such a manner as to include as much of the inflammatory matter in the electric circuit as possible at each séance, and was varied so as to include all in the course of two applications. The external electrode was connected with the positive pole of the battery. This electrode is a flat sponge hand-electrode manufactured especially for me by the McIntosh Galvanic Battery Co., of Chicago (figure 1). It is a flat metal the length of the hand and about two and a half inches wide, covered on its inner surface with sponge, while the outer surface is covered with rubber, over which a wide band is fastened at either end, through which the hand is passed. This electrode is worn on the hand of the operator, and is narrow enough not to interfere with the flexion of the fingers. By means of this the operator can locate the uterus as in bimanual manipulation, and control the direction of the current perfectly. The negative electrodes used were of two forms, and were used on alternating days. One an ordinary rectal electrode of metal, insulated with hard rubber to within one inch and a half of the end, and about one-fourth of an inch in diameter, with an olive point (fig. 2 a); the other an ordinary vaginal electrode of metal, insulated to within an inch of the extremity, with the extremity round and about three-fourths of an inch in diameter (fig. 3 b). When the object is to promote absorption of pathological tissue some distance removed from the negative pole, it is well to have the metal covered with a moist piece of chamois.

The vaginal electrode was introduced into the vault of the vagina, and connected by means of flexible wires with the negative pole of the battery. The hand electrode was controlled by the right hand, as

the current was gradually increased a cell at a time by the left hand. The right hand with the sponge electrode, well moistened, is pressed firmly down over the uterus until the patient felt a smart, burning sensation of the skin. Then the vaginal electrode was pressed firmly into the vaginal vault and kept in one position throughout the *séance*. At different applications it was made to occupy different positions, but was not moved during a single sitting. In these positions the electrodes remained, and the current was allowed to act for ten minutes. Each alternate day the rectal electrode was used, the metal portion pressed firmly against the thickened anterior wall in such a manner as to cause the current to pass through the hardened exudate in the cul-de-sac of Douglas. Thus, in the course of a few sittings all portions of the pelvic cavity affected, helped to complete the circuit of the battery, and obtained the effect of the electrolytic action. This treatment was continued every other day, except through three menstrual periods, for about ninety days.

After a very few sittings the neuralgic pains commenced to disappear. At the end of three weeks there commenced considerable softening of the roof of the vagina. The anterior wall of the rectum became more pliable, and some movement of the uterus could be accomplished without pain. The sacralgia was less severe. At the end of about six weeks the fundus of the uterus could be moved forward with but little pain. The upper part of the vagina could be moved without difficulty, the walls having become soft and pliable. There is still some deposit in Douglas's cul-de-sac, and some immovability of the uterus at the vaginal insertion. The treatment was continued faithfully, although the patient considered herself about cured. At each séance the fundus of the uterus was forced forward by pressure on the anterior rectal wall with the internal electrode, and by forcing the fingers of the hand holding the external electrode behind it, it was crowded forward, and held in its normal position during the entire treatment. The patient improved rapidly; no pain at second menstruation. The inflammatory deposits rapidly disappeared, the uterus remained in its normal position as its adhesions became absorbed. At the end of three months the patient was perfectly well.

When I say perfectly well as far as I am able to judge, I mean *perfectly well* as far as *objective symptoms* as well as *subjective symptoms*, are concerned. This case is so remarkable that I consider it alone almost sufficient to establish the efficacy of electrolysis as a rapid, safe and painless absorbent.

The following case demonstrates the rapid absorptive power of the galvanic current on a large solid deposit:

Case 2.—Mrs. K. Age 28 years. Large, stout woman. One child two years old. Has painful menstruation. Pain in right side, aggravated by walking. Has been sick in bed a number of times since child was born, and at such times is always troubled with right side. The perineum is intact; cervix large and soft, and pointing to the left; uterus large, anteverted, with a left lateral tendency. Attempts to move the uterus increase the side pain. The right broad ligament contains a large, well-defined, irregular mass of material, about 2½ inches in diameter, with a distinct cartilagenous feel. Manipulation produces excruciating pain.

This case was under treatment for eight weeks, and was completely relieved of all pain and all tenderness on pressure. The deposit in the right side was not entirely removed, but it was reduced fully three-fourths, and the uterus became perfectly movable. The treatment was advised continued, but patient left, well enough satisfied to be free from pain. The method was similar to that employed in last case, using the vaginal electrode alone internally. The treatment was used on an average of three times a week.

I might give the histories of other interesting cases of a similar nature, and with equally good results. These cases all vary in minor points, but the principles to be carried out are the same in all. Since commencing this article I have noticed in the *American Journal of Obstetrics* an article by Dr. Paul F. Mundé, on "Electricity as a Therapeutic Agent in Gynecology." He cites cases similar to the above, in which great relief was obtained and absorption promoted by use of the constant current. Was it not the electrolytic action of the current that produced the relief?

2. *Chronic Ovaritis and Salpingitis* are so intimately connected with all forms of pelvic inflammation that they may almost properly be considered under the head of chronic peritonitis and cellulitis of the pelvis. Ovaritis and salpingitis are so inseparable in their inflammatory diseases that in the late fashionable craze to unsex the woman they have both invariable disappeared together.

In a general pelvic peritonitis the ovaries and tubes seldom escape. They are intimately connected, and when the peritoneum is inflamed it bathes these intimately connected parts with the product of its inflammation, and from this the fibrous and muscular coats of the tubes, and the fibrous stroma of the ovaries, become involved. These inflammatory exudates, in process of hardening, contract, and limit the functional activity of these sensitive organs, and a general pelvic and ovarian neuralgia is the result.

In conditions of salpingitis and ovaritis, with inflammatory deposits, whatever the cause is, I am convinced great relief can be obtained, as far as the removal of deposits will give relief, by the judicious employment of electrolysis. I am certain that in a number of painful and serious conditions of this kind, I have obtained relief. At any rate, the method is well worth trying before advising the removal of the ovaries. True, there is very little relief to be obtained by any other non-surgical procedure.

The following case is a well-marked one of the kind, and one in which I think a cure was effected:

Case 3.—A young married woman, 26 years of age, with no children, consulted me for a pain in her side, which had been gradually increasing in severity for three years. The pain was constant, with excessive exascerbations for two days before each menstrual period, at which time there was also pain, though not so intense, on the right side. There was tenderness

on pressure in the left ovarian region, and if the pressure was persisted in it increased the pain so that it resembled that experienced before menstruation. In the left broad ligament a little body was discoverable which seemed like a prolapsed ovary. It was considerably enlarged and perfectly immovable. The right side was free from tenderness, and contained nothing abnormal. The pain of that side was evidently of a sympathetic nature.

For this patient electrolysis was recommended three times a week. The current that could be borne at the first few sittings was very weak—three or four milliampéres being sufficient to cause increased pain in parts. The vaginal electrode (the negative) was crowded well up on the left side to the vaginal junction, and the external sponge-electrode passed gently over the region externally, so as to include the tender ovary and tube in the circuit. The patient soon became more tolerant of the current, and it was increased within two weeks to as many as fourteen milliampéres. The patient got relief from the first application. The treatment was continued for about nine weeks. After the second week the continuous pain had entirely disappeared, although she suffered some at the first menstrual period. At seven weeks the pain and tenderness had disappeared; the menstruation was free from pain. Upon manipulation the ovary was found much reduced in size, movable, and free from all abnormal tenderness. Treatment was suspended after nine weeks.

The above case is only an example of what can be accomplished by this simple method. This woman had been blistered, morphined, and chloroformed, and had suffered in spite of all. She was in that desperate condition when I saw her, ready to submit to anything, even to having the ovary removed. That would have been the alternative if galvanism had not succeeded. The chronic exudate in the cellular tissue surrounding this ovary and tube was not only removed by the chemical action of the current, but undoubtedly the hypertrophied fibrous tissue entering into their intimate structure was reduced.

3. *Chronic Subinvolution.*—This condition is so frequently met with that I have had numerous opportunities of witnessing the beneficial action of galvanism in its treatment. I have noticed it gradually reduce in size while treating other pelvic conditions with galvanism where it was necessarily brought into the circuit. Paul F. Mundé reports cases of cure of subinvolution. He alternated with the galvanic current the faradic, also slow interruptions of the galvanic current. In such a proceeding the galvanism produced absorption of the excess of tissue, and the faradic, or the interruptions of the galvanic, caused contraction of the remaining muscular fibres. While faradization is more applicable in recent cases, shortly following confinement, before the muscular tissue has degenerated into a fibrous condition, in chronic cases the electrolytic power of the galvanic current is necessary. A. D. Rockwell also reports good effects from the galvanic current in subinvolution.

It is very seldom that an uncomplicated case of chronic subinvolution is found. There are usually other pathological conditions existing that have been active factors in producing subinvolution. If the cause be constitutional of course it should have attention when the local treatment is applied. If it be local (lacerated perineum, lacerated cervix, subinvolution of vagina, etc.), before permanent cure can be established they also will have to be restored.

Case 4.—The following case is one of interest, although it alone would not be convincing evidence in favor of the electrolytic action of galvanism, because of other treatment being used in connection with it. A large well-nourished woman in good circumstances, aged 28 years, has one child six months of age. She has been slow in recovering from her confinement. She consulted me for general pelvic weakness, with "bearing-down pains," painful urination, sacralgia, constipation and excessive menstruation. Her menstruation had reappeared the second month after confinement. The perineum was badly lacerated, the vagina large, and the anterior and posterior walls prolapsed. The uterus was large, the cervix large but intact, with a patulous os. The uterine canal was large enough to admit the index finger to the first joint. The depth of the uterus was three inches. The fundus large and soft, normally located. This patient was given the benefit of a trial of general and local treatment, but with the assurance that I considered the restoration of the perineum would be necessary before a permanent result could be arrived at. She preferred not to submit to an operation until other means had been resorted to. I put her on ergotine and nux vomica internally. Hot water vaginal injections twice a day. Galvanism three times a week, followed by an application of a cotton tampon saturated with glycerine.

The patient improved in strength from the first. The pelvic distress was soon relieved, the backache stopped, and the difficulty in urinating gradually disappeared. The vagina contracted to about normal condition, the uterus rapidly returned to natural size, and the menstrual flow became normal. The uterus, at the end of eight weeks' treatment, with probe measured but two inches instead of three; the large spongy cervix was an inch in diameter instead of an inch and a half; and the large patulous os was closed and presented a natural appearance. The patient was so well after the eight weeks' treatment that she was quite inclined to reproach me for having so persistently recommended perineorrhaphy. The patient was under observation after treatment was discontinued for about eight months, when she became pregnant, and up to that time she had had no return of her former bad symptoms.

The internal electrode used here was a cervical electrode of metal, cup-shaped and insulated except the concavity of the cup (figure 4). This was introduced in such a manner as to have the cup support the cervix uteri. The circuit was closed by applying the hand sponge-electrode over the fundus. A current from ten to twelve milliampéres was tolerated without pain, each séance lasting ten minutes.

4. *Hyperplasia of the Uterus.*—This condition, which in many respects resembles subinvolution, can properly be considered now. It does not necessarily, although usually, occur in women who have

borne children. It may be simply an inflammatory condition of the connective and fibrous tissue in a chronic subinvoluted uterus, or it may be a general hyperplasia of the uterus, caused by the irritation of a lacerated perineum or cervix; or it may be caused from the irritation of repeated menstrual congestions which is made abnormal by a flexion or displacement of the uterus; or an error of nutrition from a general nervous derangement may be the exciting cause. *Whatever the causes are*, we find a large tender uterus, a thickened catarrhal condition of the endometrium, oftentimes an inflamed condition of the cervical glands, with the thick albuminous discharge welling out, and very often a well-marked abnormal displacement from the sheer weight of the organ. The condition is one of hypertrophy of the normal constituents of the organ from congestion and inflammation.

This condition will yield to electrolysis, although I cannot select any *one* well-marked case as an example. I have several times seen this condition yield to the chemical effect of the galvanic current when using it in other connections. In a condition often accompanying this I have seen very pronounced results, and it is worthy of mention because of the unsatisfactory results by the ordinary methods of treatment of the difficulty. I refer to *inflammation of the cervical glands*. This disease, with its characteristic tenacious albuminous discharge, every physician has had more or less to do with. The ordinary forms of treatment where cure is accomplished are harsh, and unsatisfactory in the extreme. Destruction of the deep gland tissue by curetting, cauterizing, or cutting, are the only methods that have heretofore given satisfactory results. These glands can be destroyed, or their condition of chronic inflammation reduced by the effect of repeated applications of a metal bulb of the negative pole of a galvanic battery. I first noticed this condition yield while treating other forms of pelvic trouble with electricity where it was desirable to pass a metal electrode into the cervical canal. One-half dozen thorough applications of this description, using a bulb electrode similar to those used for stricture of the urethra, and gradually increasing the size of the bulb, will, I think, cure the most obstinate cervical catarrh. A current of from fourteen to twenty milliampéres can be used without producing any pain. I pass the bulb of the electrode through the internal os at each application.

5. *Strictures of the Uterine Canal* I have removed by electrolysis in a large number of cases. It was in this condition, at the suggestion of Prof. DeLaskie Miller, of Chicago, that I first used electrolysis. That gentleman had been using it with success for some time before my first attempt. It matters not what the condition is that produces the stenosis, or in what portion of the canal it exists. It has all the advantages over gradual dilation, divulsion or cutting, that electrolysis has in the treatment of male urethral strictures over gradual dilation, divulsion or cutting, viz.: painlessness, permanency, and, in case of gradual dilatation, promptness. There is little danger of producing a peritonitis by electrolysis.

The method of operating on these strictures is very similar to that employed in strictures of the urethra. A small staff of soft metal, covered with hard rubber, upon the end of which one of a graduated set of olive-shaped metal bulbs may be screwed, is used for the uterine electrode. After making out the position of the uterus by manipulation, or by passing a small flexible metal probe, the staff of the electrode is made to conform with the supposed shape of the canal (figure 5). After this a flat sponge-electrode, attached to the positive plate of the battery, is applied to the thigh or abdomen of the patient, the internal electrode is passed into the cervix, either through a Sims speculum or a wide bivalve, and, while the cervix is steadied with a strong tenaculum with one hand, the electrode is guided by the other into the cervix until it finds its first obstruction, the current is gradually increased, while very gentle pressure is made on the electrode, until it passes in the course of the canal all the obstructions. Usually the smallest canal can be passed at the first sitting by a bulb the size of a No. 7 or 8 English catheter. This can be repeated with larger bulbs, if desirable, for three or four times, when it will be found that the canal is permanently enlarged.

(*To be concluded.*)

MEDICAL PROGRESS.

THERAPEUTICS OF TRICHINOSIS.—The value of glycerin in the treatment of trichinosis has been repeatedly alluded to. FIEDLER noticed several years ago, in the preparation of microscopic specimens, that trichinæ and their embryos died at once when brought in contact with glycerin (even if diluted with two to three times its quantity of water). This was evidently the result of the hygroscopic power of glycerin, causing the abstraction of water from the parasites. This fact led Fiedler to treat animals, fed purposely with trichinous meat, with glycerine; but he did not obtain any positive results. Later he exhibited glycerin in several cases of trichinosis in man, and was successful. Mercel also published a case of trichinosis cured by glycerin, so that the profession regards this drug justly indicated in this affection.

In the *Deutsches Archiv für Klinische Medizin*, vol. xxxvii, No. 12, Fiedler recommends the hourly administration of a tablespoonful of pure glycerin in trichinosis, though only in graver cases, as large doses of the drug may produce hæmoglobinuria and other toxic symptoms.

In this instance the employment of Unna's keratine pills, or keratine capsules, which dissolve only in the small intestines, would appear very appropriate. To complete the abstraction of water from the parasites, Fiedler advises to give large doses of alcohol and to prescribe a rigid dry diet. Glycerin may also be injected into the rectum. A powerful purge, though, is to precede all these therapeutic measures. —*Therapeutic Gazette*, June 15, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JULY 17, 1886.

"THE FUNCTION OF THE RECURRENT LARYNGEAL NERVE."

Such is the title of the admission thesis of DR. FRANK DONALDSON, JR., of Baltimore, to the American Laryngeal Association, in May, 1886, which may be found in the *American Journal of the Medical Sciences*, for July, 1886. It is a question which has received but very little investigation heretofore, and Dr. Donaldson's discussion of it, with the conclusions drawn from experiments in the Physiological Laboratory of Johns Hopkins University, though short, must be considered as one of the most notable physiological achievements of the year, and a positive addition to laryngeal physiology.

How, and under what circumstances, does the constrictor or respiratory function of the recurrent laryngeal nerve assert itself? How are these functions to be differentiated? The nerve must contain two sets of fibres, innervating muscles of distinct and separate functions; whence do the two sets of distinct impulses come. Such are the questions asked by the writer. And as the filaments of this nerve have a distinct function, is the origin of these filaments as distinct as their functions? The known physiological facts concerning this nerve may be briefly stated as follows: It supplies both phonatory and respiratory muscles—it supplies all the intrinsic muscles of the larynx except the crico-thyroid—but it is chiefly a motor nerve; the internal thyro-arytenoids, the lateral crico-arytenoids, and the transverse arytenoid are adductor (phonatory) muscles of the larynx, and the posterior crico-arytenoids are the abductor (respiratory muscles) of the larynx; and as has just been said, all these muscles receive their nerve supply from the recurrent laryngeal nerve. And the main question is, How is it that impulses travelling along this nerve alternately close and open the glottis? And how can we explain the fact that at one moment the nerve stimulus acts upon the adductors and at the next moment upon the abductors of the larynx.

Dr. Donaldson records nine experiments made upon dogs, the experiments being undertaken to test the following points: 1. Is it true that the constrictors cease to act during profound narcosis, or when consciousness is suspended from any cause? 2. Do we always get abduction of the arytenoids (dilatation of the glottis) on stimulation of the recurrent nerves, when consciousness is suspended? His interest in this subject had been awakened by the conclusions of Dr. F. H. Hooper, of Boston, "that stimulation of the recurrent laryngeal nerve always produced abduction of the arytenoid on that side, provided the animal was deeply under ether; that on removing the anæsthetic, the dilatation produced by stimulation became less and less as the animal regained consciousness, until finally contraction of the glottis followed; and that the abduction differed in different dogs. In other words, he concludes that the tendency of the glottis is to remain widely open, and that any given stimulus from the recurrent nerve would act upon the abductor muscles alone unless volition came into play, when the stimulus would produce the opposite effect and produce adduction." In the first five of Dr. Donaldson's experiments it was found that under no conditions was abduction of either or both cords obtained, except where the branch of the recurrent going to the posterior arytenoid itself was excited. In all cases adduction of the arytenoid was obtained, however deeply the animal was under the anæsthetic. In two cases it was found that when the animal was made thoroughly apnœic, and when for some seconds there was neither glottic nor respiratory movement, adduction was the result of stimulation; and in two cases, *after the animal was dead*, though of course before the death of the nerves or muscles of the larynx, stimulation caused closure of the glottis. "Under all these conditions of unconsciousness and narcotism, then, was *adduction* produced. This result followed, in these experiments, stimulation of the cut and uncut nerve; and followed chemical and mechanical, as well as electrical, stimulation." And in still another experiment, in which the branches of the recurrent to the individual muscles were dissected out and stimulated equally, none showed a tendency to a more rapid degeneration than another.

From these results it seems that the following conclusions are perfectly legitimate: 1. The constrictor muscles of the larynx do not cease to act during pro-

found narcosis or during suspension of consciousness from any cause; their action is independent of volition, in the sense that they lose their power during suspension of volition. 2. Abduction of the arytenoids does not always follow suspension of consciousness. Under what considerations, then, asks Dr. Donaldson, do we get abduction of the cords upon stimulation of the recurrent nerve? There must be some conditions, since abduction was obtained by Dr. Hooper, who thinks suspension of volition one condition under which stimulation of the recurrent caused abduction. Dr. Donaldson thinks that he has discovered the conditions under which the abductors act. He found that: 1. The abduction obtained by Hooper was in no way reflex. 2. Abduction is in no way dependent upon the unconsciousness of the animal. 3. It is with weak stimuli only that abduction of the cords takes place, which movement of abduction gradually passes into one of adduction as the strength of the stimulus is increased. 4. This result invariably followed, whether the animal was slightly, deeply, or thoroughly narcotized; whether the animal was eupnœic or apnœic, when the dog had his medulla destroyed, and after local death had taken place. 5. The rate of stimulation did not affect the general result. 6. After strong and constant stimulation the abductor muscles became worn out and ceased to respond to stimuli. 1. In apnœa the cords came nearer the middle line, the abductors receiving no stimulus in this condition from the respiratory centre. "Here then, I think we have a suggestion as to the innervation of the muscles of the larynx." Dr. Donaldson agrees with Dr. Hooper that the assertion that the abductor fibres of the recurrent are prone to disease is unwarranted. "The clinical fact may be explained, however, by the theory of the greater irritability of the abductor muscle or nerve fibres. For in cases of unilateral lesion of the cords from an aneurism or tumor, the constant pressure exerted by either, acts as a mechanical stimulus to it, and the more irritable abductors are, therefore, the first to show the result of this constant stimulation, in their loss of function."

Dr. Donaldson would explain the innervation of the larynx somewhat as follows: Though the diaphragm and all the other muscles employed in respiration are voluntary muscles, breathing is really an involuntary act; and though we may modify respiration by the will, respiration habitually takes place without the intervention of the will. As the larynx is an essential part of the respiratory apparatus it must receive impulses from the respiratory centre in the medulla. It is necessary that the glottis be kept open, and we find that the cords are pulled slightly away from their apparently normal position between extreme abduction and extreme adduction at each inspiration, even in normal breathing. "The fact that in deep narcosis the cords are pulled widely apart would seem to show that stronger stimuli than usual are proceeding from the respiratory centre to the abductor muscles; for in all deep narcosis the tendency is towards dyspnœa, and always in this condition normal respiratory muscles are called into greater play. The constrictors of the larynx are apparently always in a state of partial tonic contraction, and ready for use at any moment. I found that in every case where the dog was thoroughly apnœic that the cords came much closer together than in normal breathing; and this, it seems to me, is what we might expect, for in apnœa the respiratory centre is at rest; and the respiratory function of the larynx being for the moment in abeyance, the protective or constrictor function of that organ asserts itself." He thinks, then, that both the respiratory and constrictor or (protective) functions of the glottis are governed by those laws which govern the rest of the respiratory apparatus. "There seems to be a similarity between the nerve fibres of the recurrent and those of the pneumogastric, and we are inclined to think that the great irritability mentioned above is in the nerve fibres supplying the abductors; the two sets of fibres of the recurrent supply opposite sets of muscles, and may be likened to the two sets of fibres composing the pneumogastric —the one answering to less, the other to stronger stimuli." Finally, he thinks that the constrictors of the larynx, which need a stronger stimulus to set them in action, may find that stronger stimulus in the numerous reflexes which arise on the introduction of a foreign body into the larynx.

EDUCATIONAL.

We are pleased to notice the frequent endowments given to the colleges and universities in this section of the country. During the last few years the Northwestern University has been particularly fortunate. Its fine location in Chicago's prettiest and most flourishing suburb, and its prudent financial policy, has attracted the attention of many wealthy men, and has led them to endow it liberally. During the last few years it has received two hundred thousand dollars, which has enabled it to clear off its old indebtedness and leaves it with a million and a half of property, much of which is rapidly increasing in productivity.

The latest gift, made within the past three months

by one who wishes to remain for the present unknown, is most timely. It consists of forty thousand dollars with which to erect a Science Hall for the accommodation of the departments of Physics and Chemistry. These departments have grown rapidly and their laboratory rooms have been cramped and uncomfortable. The walls of the new building are already well up. Its erection by the Northwestern University for these departments constitutes an epoch in the history of science at Chicago. It is the first building specially erected for instruction in these sciences in the city or its suburbs. The building is a double structure having a frontage of 130 feet, and a depth of 114 feet. The department of chemistry has its entrance in the left front, and occupies the left half of the building. The department of physics has its entrance in the right front and occupies the right half of the building. The structure is of two stories. The basement is built of stone, rock-faced. It is fourteen feet high and entirely above ground. On the outside, above the stone, is a water table of terra cotta. Above this is the chief story, 16 feet high, the walls of which are of red brick. The whole height from the floor of the basement to the ridge of the roof is 56 feet.

The basement will be occupied by the heating apparatus and the steam power which will drive a dynamo and some machinery. For the department of chemistry it contains a laboratory for organic chemistry, a mineralogical laboratory, a store room, a general work room, a cloak room and a toilet room. For the department of physics the basement contains three special laboratories and two work rooms.

The main story contains in the department of chemistry a lecture room, a large general laboratory, a laboratory for quantitative analysis, a directors' room, a special apparatus room and a store room.

In the department of physics is a lecture room, a general laboratory, an apparatus room, a directors' room, a balance room, a dark room, a toilet room and a general work room. These laboratories have been planned by men who have worked in the best laboratories in this country and in Europe, and the plans have been submitted for the criticism of the prominent professors in other institutions in this country. It is believed that the result leaves little to be desired. The expense of the building is $41,000.

The facts and the principles given to the student in lectures and in books will be verified by the student himself in these laboratories. The inductive sciences can be successfully studied only by experimental methods. The training of the mind in the inductive logic of the age, "the interpretation of indications," *must be* in the laboratory—it cannot be by means of books. The College of Liberal Arts of this University, through its elective studies, gives to all students no matter what degree they seek, an opportunity to obtain this training. The new Science Hall, together with the recently established Biological Laboratory, places the scientific departments of this institution on a most excellent basis.

Its professional schools, consisting of the College of Medicine (the Chicago Medical College); the Union College of Law; and the College of Pharmacy, are located in Chicago, and are equally enjoying a good degree of prosperity. The practical laboratories of chemistry, histology and pathology belonging to the College of Medicine are among the best in this country. All these facts show that the Northwestern University with its several departments is an imposing institution, with a broad and stable foundation and a bright future.

EFFECT OF DRASTICS ON THE INTESTINES.

M. Lucien Butte three years ago concluded a series of experiments which were made in order to clear up the question as to the action of drastics on the intestinal mucous membrane of dogs. The experiments were made with colchicine, veratrine, croton oil and colocynth.

When colchicine was given hypodermatically or by the stomach it was found that it produced active inflammation of almost three-quarters of the small intestine, which showed a deep red color, with dark disseminated submucous hæmorrhages. About the middle of the duodenum were ulcerations as well defined as though cut out with a punch, the blanched color of which contrasted strongly with the red color of the mucous membrane. There were no traces of hyperæmia in the large intestine. These results, though in accord with the experiments of Roy, have been partly weakened by those of Pouchet, in a paper read by him before the Société de Médecine Légale de France, in February last. Pouchet made his experiments practically under the same conditions as Butte, found no hyperæmia or effusions of blood, and thinks that the ulcerations should be attributed to some other substance than colchicine.

As regards veratrine Butte confirmed the results of Vulpian, published in his "Leçons sur les Substances Toxiques et Médicament euses." When veratrine is given either subcutaneously or by the stomach daily it has a very marked action upon the intestinal mucous membrane: the first half of the small intestine, especially the duodenum, is hyperæmic and has a rose color. The duodenal mucous membrane is the

seat of many oval ulcerations of a yellowish white tint, with a peripheral border and a central elevation. The large intestine is only slightly reddened. There are no large submucous ecchymoses; it is all limited to increased vascularity and slight effusions of blood. The inflammation is thus much less severe than in case of poisoning by colchicine.

On the small intestine croton oil has a very marked effect, but none on the large intestine. When given subcutaneously death results at a later period than when given by the stomach, and the intestinal epithelium, which is seen to be strongly colored by the biliary coloring matters, is so altered that small ulcerations are seen; showing that even when given subcutaneously croton oil has a selective action on the intestine, by which it appears to be eliminated. Death rapidly follows the injection of the oil into the stomach, preceded by vomiting and diarrhœa. The intestine is very violently irritated, much more so than by either colchicine or veratrine. More than half of the intestinal mucous membrane is of a uniform blackish red color, and there are extensive submucous ecchymoses. About the middle of the duodenum are seen a number of small superficial ulcerations.

The experiments made with the extract of colocynth were made in accord with those of Orfila. Singularly enough, this is the only one of the four drugs which produces changes in the mucous membrane of the large intestine; it causes alterations which are found almost throughout the whole extent of it. The most striking appearance is the presence of longitudinal red bands regularly placed along the whole length of the large intestine. On the small intestine the action of colocynth is much less intense. With this drug, as well as with veratrine, it is difficult to produce toxic symptoms when the drug is administered by the stomach.

Butte thinks that these experiments show that the drastics have a distinctive action upon the intestinal mucous membrane, which is peculiar to themselves, yet differing from one another in this action. While this may be true so far as is known, it scarcely seems proper to draw too definite conclusions as to what may be predicated in a medico-legal case involving these questions, since there may be other drugs which will produce analogous effects. The question may be an important one, however, and it is a field which might develop positive additions to our knowledge.

MEDICAL WRITERS AND TYPE-WRITERS.

While the type-writer cannot be included in any list of drugs, nor found in any catalogue of surgical instruments, it must nevertheless be regarded as an adjuvant to good writing, and as a direct antagonist to bad temper, and should form a part of the armamentarium of "instruments of precision" of every one who does much professional writing. If each medical writer in the country—in the world—could spend one week in an editorial office and pass the time in reading manuscripts, the manufacturers of these instruments would acquire sudden and unprecedented wealth. Those who are in the habit of reading manuscripts know that writers vary, in regard to writing material, from the type-writer and new steel pen to the gold pen, the stylographic, the bad steel pen, the quill, the pencil, and (presumably) the walking-cane. It seems to be an immutable (and very unfortunate) law—whether psychological or not we need not stop to consider—that many who use quills, pencils and canes, and those who write illegibly generally, have in some way acquired a habit of discarding the accepted spelling of many words, and differ materially with certain good authorities on capitalization.

There are several reasons why medical men who write should use the type-writer. In the first place as a matter of economy of time, and hence, often, of money. It is easily seen that there is a great saving of time with a machine which will do a piece of work in one-half or one-third the time that it can be done by hand; and this is easily accomplished with a type-writer. In the second place, the machine promotes accuracy, especially in thinking, for two reasons: being more rapid than the pen, the thoughts of the writer do not wander so far ahead of his work; and should he wish to refer to what has been written he can see it at a glance, as on a printed page. A third reason is, the person who uses a type-writer sits erect, and can thus work for a longer time without fatigue than when bending over as in writing with a pen. It is thus more wholesome than the pen. The machine further promotes accuracy in the printing office—a great source of comfort to writers; and it promotes a degree of accuracy on the part of the writer in that he will not be able to make a wavy line or two or three letters and an apostrophe do duty for a long word, and his punctuation marks, if not more correct, will at least be less numerous. With a machine, therefore, writing becomes a pleasure, with none of the discomforts accidental and incidental to the use of the pen.

SURGEON-GENERAL ROBERT MURRAY, of the U. S. Army, will be 62 years of age in August of the present year, when he will be placed on the retired list.

Dr. Murray will soon have completed a long, efficient and most honorable term of service for his country. It is thought that Surgeon J. H. Baxter, who stands next on the roll, will be the worthy successor.

International Medical Congress Interests Abroad.—In Vienna, Austria, a local committee of twenty-five members has been formed for facilitating arrangements for attending the Ninth International Medical Congress in Washington, 1887.

It is stated in one of our exchanges that Professor James F. Harrison has resigned the chair of Practice of Medicine and Obstetrics in the University of Virginia, which he had held for several years past.

SOCIETY PROCEEDINGS.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, March 25th, 1886.

The President, J. C. Wilson, M.D., in the Chair.

W. E. Hughes, M.D., Recorder.

Dr. H. F. Formad read a paper on

INTRA-CRANIAL HÆMORRHAGE; RECORD AND CLASSIFICATION OF 143 CONSECUTIVE FATAL CASES OBSERVED IN MEDICO-LEGAL PRACTICE AND IN PRIVATE AUTOPSIES IN PHILADELPHIA.

There existed, he said, no well-defined descriptions of the various forms of intra-cranial hæmorrhage with reference to their etiology, and no classification that could be of any service in medico-legal examinations, and Dr. F. suggested the classification and observations presented below as particularly adaptable for the latter purpose. These records may also be of some use to the surgeon who wishes to trephine. The observations were sufficiently numerous to warrant conclusions of importance for various ends. He regretted that he met his cases on the autopsy table only, and hence was unable to offer clinical details. In some cases the history was far from being reliable, and in a few the history was left to conjecture from surroundings, the circumstances of the case, and the appearance and general lesions of the body. He wished to give credit to his colleague in coroner's work, Dr. R. R. Stewart, whose assistance in these observations he enjoyed, and also to his assistants, Drs. A. J. Plummer and George H. Chambers. Dr. Formad's cases of intra-cranial hæmorrhage embrace the results of various kinds of head injuries (traumatic), and cerebral apoplexies (idiopathis hæmorrhages) as well. By the term cerebral apoplexy he meant exclusively hæmorrhage in the brain, and did not refer to congestive, serous, embolic, or nervous apoplexies, and other affections which tyrannic nomenclature has thrown together under the name of apoplexy.

Idiopathic cerebral apoplexy should also be strictly separated from traumatic (this is *not* done by many writers). The latter can be further subdivided into very well defined sub-varieties of hæmorrhages, each etiologically distinct, as will be shown below. These observations will clearly show the necessity and usefulness of a classification such as suggested. There should never be any reasonable doubt at the post-mortem table as to whether a cerebral hæmorrhage was due to disease or to injury, or to both combined; nor as to whether a head injury preceded or followed an intra-cranial hæmorrhage. Dr. F. believed that the diagnosis between the conditions stated was much much more difficult during life. He had seen errors made by foremost surgeons and physicians in the best hospitals in Philadelphia. Dr. Formad had seen cases of apoplexy diagnosed as fracture, and trephined, and he had seen cases of fracture of skull unrecognized and untouched, left to die in the medical wards.

Upon the post-mortem table, however, there should be no difficulty in diagnosing such lesions at the present status of morbid anatomy as a distinct and well-defined science. After sufficient accurate observations have been made and after seeing conditions to repeat themselves, case after case alike, and having in the majority of instances cause and effect directly before the eyes, one should be able, in disputed cases, to make a post-mortem diagnosis which leaves but little room for doubt.

Dr. Formad divided the cases of intra-cranial hæmorrhage observed by himself into the following eight different classes.

Class I; 12 Cases. Post-mortem Appearance.—One or more small hæmorrhages in the fasculi teres of the fourth ventricle; also, ecchymoses in the lining of the other ventricles (no massive hæmorrhage anywhere) cerebral substance as well as membranes intensely congested. Cranium much congested; drops of blood oozing from cut surface and from periosteum. Marks of contusion in scalp, with more or less ecchymoses, noted in all cases.

Histories.—In two cases death was caused by electricity (details will be recorded elsewhere). Ten cases revealed concussion of brain from injuries to head, without fracture of skull. Death was rapid or sudden from shock in all these cases. Six were males and six females; the majority were young persons.

Class II; 23 Cases. Post-mortem Appearance.—Massive hæmorrhage (blood-clot) of various sizes found between pia- and dura-mater, location in the majority of cases about opposite to place of application of violence. In none of these cases was the meningeal blood-clot located immediately beneath the point of application of violence. Ventricular ecchymoses also found usually. Brain anæmic in proportion to quantity of hæmorrhage. Scalp injury well marked in some, in others less so, while in a few cases it was hardly noticeable.

Histories.—Concussion from injuries to head without fracture in twenty-one cases; with fracture of skull in two cases. Death rapid (all within one hour) or sudden either from shock or from compression of

brain, the result of pressure from clot, or from both. Fourteen males, nine females; ages varied.

Class III; 45 Cases. Post-mortem Appearance.—Massive hæmorrhage (blood-clot) usually quite large, located between dura-mater and inner surface of fractured skull, and at the site of application of violence only. Brain anæmic.

Histories in all these cases revealed injuries to skull from accidents, blows or other violence, resulting in fracture of skull. Death on the average ensued slowly from compression or anæmia of brain in the lapse of from several hours to several days (in a few cases five to eight days). Thirty-eight males and seven females; majority young and middle-aged persons.

Class IV; 12 Cases. Post-mortem Appearance.—Massive hæmorrhage, the same as in the preceding class, but occurring both at site of application of violence and also at some point on apposite side of skull, the first, a large clot between dura-mater and scalp, while the latter in the arachtoid (between dura- and pia-mater), and usually small. At the site of injury there was found a fracture of the skull in all these cases, so that they presented the combined features of Classes II and III.

Histories in these twelve cases observed, showed injury to skull resulting into both fracture and concussion. Death was nearly instantaneous in all these cases. Nine were males and three females, mostly young and middle-aged persons.

Class V; 9 Cases. Post-mortem Appearance.—Punctiform and multiple hæmorrhages into the tissue of the dura-mater, which showed much thickening and adhesions to inner surface of skull from chronic hæmorrhagic pachymeningitis; great œdema of the pia-mater. Brain congested, but no blood-clots within cerebral substance.

Histories in these cases revealed former attacks of sunstroke or old injuries of head. Death usually sudden and usually following a fall or severe intoxication and excitement. Ages of deceased, between 20 and 50 years; all males.

Class VI; 34 Cases.—Massive hæmorrhages of various sizes into the brain-substance proper and thence into one or both of the lateral ventricles. Hæmorrhagic softening of brain-substance of corpora striata or their vicinity. No meningeal hæmorrhage in any of these cases, though in some blood was observed to have leaked out from the inner ventricles through the transverse fissure and fourth ventricle, and some usually liquid (post-mortem) blood would be seen in the cerebral fissures upon periphery in the meshes of the pia-mater and aradinoid. Brain-substance in nearly all cases quite anæmic. Atheroma of cerebral vessels in all but three cases. Multiple small aneurisms of cerebral vessels noted in several cases. Chronic pachymeningitis in various degrees in all but five cases. In some cases there were scalp injuries from secondary falls, *i.e.*, falls that were the result of preceding cerebral hæmorrhage. Many of these cases came under coroner's jurisdiction on account of suspicion of violence.

Histories, wherever obtainable, revealed either alcoholism, rheumatism, or syphilis; middle or advanced age. Twenty-six males, eight females. Death in the majority of cases ensued slowly. These are true cases of idiopathis cerebral apoplexy.

Class VII; 6 Cases. Post-mortem Appearance.—Massive hæmorrhage of various size, below pia-mater, into brain-substance, without breaking into lateral ventricles. In one case the blood-clot involved the substance of the pons and protruded into fourth ventricle; in two cases it occupied the substances of the right parietal lobe, which was the seat of an abscess; in three cases the hæmorrhage was multiple, in small foci, with localized hæmorrhagic softening of periphery of brain-substance in various places. In three cases there was atherema and in the other three fatty erosions of the cerebral vessels. Chronic pachymeningitis in all cases. Brain-substances congested.

Histories were those of former head injuries, alcoholism and probable syphilis. Death rapid, following intoxication, or exertion. Age advanced in all cases. Five men, one women. Foul play had been suspected in all these cases.

Class VIII; 2 Cases. Post-mortem Appearance.—Massive meningeal hæmorrhage below pia mater, combined with hæmorrhage into ventricles; no visible hæmorrhage into brain-substance. Atheroma and multiple; small aneurisms of vessels of pia and of choroid plexus. Echymoses in scalp.

Histories of accidental falls. No previous symptoms of cerebral disease had been noted. Intemperate habits; injury of the head leading to rupture of the diseased vessels evidently had preceded the cerebral hæmorrhage. The persons were at work (washing) at the time, when nearly simultaneous with the fall death ensued. Both were women; ages 57 and 63 years.

A number of cases of intra-cranial hæmorrhage observed by Dr. Formad he had excluded from the series above detailed. Several cases of compound comminuted fracture in which the skull, membranes and brain were partly pulpified into a mass and hence the hæmorrhage not being satisfactorily made out, were excluded from the above records. He also excluded chronic cases of cerebral hæmorrhage, and those resulting in abscesses or a fatal lepto-meningitis or cerebritis, after the patients had partly recovered from the immediate effects of the hæmorrhage. Dr. Formad did not incorporate into these records another large class of intra-cranial hæmorrhage, viz.: that of infantile meningeal hæmorrhage. Of these he had seen many in coroner's work. Meningeal hæmorrhage is common in infanticides and fœticides; and even in still-born children. Dr. Formad could not plausibly explain the frequency of meningeal hæmorrhage observed in still-born, otherwise than presuming that they were due to traumatic injuries from violence or to compression of the cranium during protracted labor, or when forceps had been injudiciously applied. He did not meet with cerebral hæmorrhage in children other than meningeal.

Returning to his classification, Dr. Formad stated that the quantity of the hæmorrhage or the size of the clot in any case of intra-cranial hæmorrhage appeared, in all the cases he observed, to depend upon the duration or the time that elapsed from the mo-

ment of injury to death. In cases where death ensued rapidly or instantaneously from shock, like in many fatal cases of concussion, or even in fractures of skull followed by immediate death, like in falls from a great height, the bulk of the ante-mortem hæmorrhage (the blood-clot) was remarkably small; or clots were occasionally entirely absent, and only a post-mortem oozing of liquid blood could be observed. When death is protracted for several hours, then the blood-clot was usually large, weighing up to six or eight ounces, and causing death by compression of the brain. In some cases of fracture of the skull the hæmorrhage is probably delayed for several hours, or ensues but very gradually. Some patients are said to have walked around for many hours after the injury, and subsequently, when the blood oozed out in sufficient quantity to compress the brain, they fell, became unconscious, and died in coma. In one case of this nature he had found a meningeal clot weighing eight ounces.

Dr. Formad observed that in the cases in which the intra-cranial hæmorrhage was voluminous and death instantaneous there was very little scalp ecchymoses; whereas scalp hæmorrhage was more pronounced if the intra-cranial hæmorrhage was small and death delayed.

Further, Dr. Formad noticed that in no case where there was internal cerebral hæmorrhage, was there any meningeal hæmorrhage when cerebral vessels were normal; and in no case of traumatic meningeal hæmorrhage did he see any coincident ventricular hæmorrhage (except small ecchymoses), unless there existed some old lesion of the vessels or substance of brain. It appears, however, that blood from the lateral ventricles may leak through the foramen of Monroe into the third ventricle and thence by the aqueduct of Sylvius find its way into the fourth ventricle, but Dr. Formad did not see in any one of the cases he observed that a primary hæmorrhage into the fourth ventricle ever extended to the lateral ven tricles, probably on account of its rapidly fatal character. A hæmorrhage on the outside of an uninjured pia-mater cannot reach the interior of the brain or the lateral ventricles.

The source of the hæmorrhage is often very difficult to determine. In fracture of the skull, the hæmorrhage is often diploic; in concussion of the brain the hæmorrhage has for its source the vessels of the pia-mater: in diseased conditions of the brain or in atheroma of vessels the small feeding branches of the middle cerebral and of the basilar artery bleed most frequently, and the blood breaking into lateral ventricles forms clots in either one or both of the ventricles.

The views expressed by Dr. J. A. Lidell in his large "Treatise on Apoplexy" (New York, 1873, p. 133), that "meningeal hæmorrhage not unfrequently occurs spontaneously, as well as in consequence of the operation of violent causes," and that (see page 120) "meningeal hæmorrhage of spontaneous origin is not a rare affection," is unquestionably erroneous. Yet such "views" are quoted by writers on forensic medicine and presented to juries in murder trials as facts. Ignorant post-mortem examiners can set murderers free, or on the other hand create unnecessary court-trials.

Dr. Formad's conclusions were:

1. Hæmorrhages exclusively above the pia-mater and above the dura-mater, *i.e.*, on the outside of the brain, are always due to *traumatism* or to *sunstroke*, provided a cerebral source for hæmorrhage is excluded and the cerebral vessels and membranes are not diseased.

2. Hæmorrhage in the floor of the fourth ventricle is always traumatic, provided there are no blood-clots in the lateral ventricles or any other part of the cerebral substance.

3. Hæmorrhage exclusively below the pia-mater, or in any part of the brain-substance or in the ventricles (except the fourth), is always idiopathic, *i. e.*, is due to disease.

4. A diseased condition of the cerebral vessels or substance is necessary in order to ascribe a hæmorrhage to disease; there must be traumatism (some form of violence or falls) in order to induce a hæmorrhage in a normal brain.

5. The blood-clot in concussion of the brain is not found at the point of application of violence, but always somewhere about the opposite side of the brain, and always within the arachnoid, *i. e.*, between pia- and dura-mater.

6. The blood-clot in fracture of skull is always found at the point of application of violence immediately below and always between the dura-mater and the fractured part of the skull itself.

7. A blood-clot formed within the cranial vault is more favorable to the patient if due to fractured skull than if due to a mere concussion.

8. Only clotted blood and infiltration of blood corpuscles into tissues indicates an ante-mortem hæmorrhage; liquid blood is due to post mortem oozing, and only stains, but does not infiltrate tissues.

9. Severe bruises and cuts of the scalp may be seen in cases of idiopathic apoplexy where a sudden cerebral hæmorrhage causes a person to fall.

10. In some cases it is impossible to decide by medical examination alone as to whether a head injury and the result is due to a fall or to violence.

11. External marks of violence may be invisible to the unaided eye in some cases of injury of the head or other parts, but are easily detected and also distinguished from post-mortem spots by means of the microscope.

12. The bulk of an intra-cranial hæmorrhage stands usually in inverse ratio to that of the external hæmorrhage into scalp.

Dr. T. D. Dunn presented an unusual case of

CORTICAL HÆMORRHAGE WITH RHYTHMICAL CONTRACTIONS OF THE LEFT SIDE OF THE BODY.

A widow, æt. 73 years, came under his care June 23, 1886, with symptoms of congestive apoplexy. In a few days she recovered sufficiently to be able to leave her room. With the exception of some mental impairment for several months before the attack her health had been good. There was a second attack during the night. When Dr. D. saw her there were regularly recurring movements of the left side of the

body. Sensation and consciousness were not affected. The right side of the body could be moved at will, but articulation was impossible. The contents of bowels and bladder were discharged involuntarily. The movements continued during sleep. The movements gradually diminished, being lost in the leg on the fourth day and in the arm on the fifth. She died six days after the attack. At the autopsy a clot as large as a hen's egg was found situated on the right side of the brain, very superficially, extending from the ascending parietal convolution to the occipito-parietal fissure, and from the convolution of the longitudinal fissure to the tempero-sphenoidal lobe. The convolutions pressed upon and partially destroyed were the ascending parietal, the convolution of the longitudinal fissure, the supra-marginal, and the angular gyri.

DR. F. A. PACKARD presented a patient having a

CONGENITAL ANOMALY OF BOTH HANDS.

The right hand consists of a thumb, an index and a little finger, with only two metacarpal bones. The thumb has two phalanges and articulates with the same metacarpal bone as the index finger. The power of flexion is absent. The index finger has three phalanges. It can be flexed as a whole, but the individual phalanges are fixed. The little finger has three phalanges. The left hand consists of a thumb, index, ring, and little fingers, with four corresponding metacarpal bones. The patient is one of five children. His mother and father are normally formed; one sister has one hand that resembles his left; another has a left hand similar to his, and on the right hand has the middle and index fingers united throughout their entire length; one brother has both hands similar to this man's left. The only member of his generation not deformed is his twin brother. He has several children, all normally formed, and so, too, with his nephews and nieces.

DR. J. M. BARTON presented a

TUMOR OF THE STOMACH,

removed from the body of a man æt. 47 years. His digestion became impaired two years ago, and soon afterward he noticed the tumor. The symptoms were mainly those of chronic gastritis, with at one time a profuse hæmorrhage. The tumor was hard and well defined, and occupied the epigastric region. At the autopsy the tumor was found occupying the upper portion of the pyloric outlet of the stomach; did not encroach enough on the outlet to prevent the passage of a finger. It was found, on microscopic examination, to be be a scirrhus carcinoma.

CHICAGO MEDICAL SOCIETY.

OFFICIAL REPORT.

Stated Meeting, June 21, 1886.

THE PRESIDENT, E. J. DOERING, M.D., IN THE CHAIR.

DR. FRANK E. WAXHAM read a paper entitled

INTUBATION OF THE LARYNX AS A SUBSTITUTE FOR TRACHEOTOMY, WITH A REPORT OF 83 CASES.

The author referred to the various modifications that had been made in the instruments within the past year. First, the enlargement of the heads of the tubes to prevent slipping into the trachea; second, the addition of a shoulder to prevent their expulsion; and third, a very important modification consisting of the construction of the tubes with thinner walls, giving greater breathing space and a better opportunity for the expulsion of false membrane. The author also presented a feeding bottle useful in those cases where they entirely refuse to take nourishment, as they will do occasionally, and also a trachea forceps for the purpose of removing false membrane by way of the mouth when there is detachment below the tube, or when it is pushed down ahead of the tube and cannot be expelled.

The author thought that the first question that would arise, in considering whether we had a substitute for tracheotomy in tubage of the larynx, would be as to the comparative success of the two methods. By personal inquiry and by correspondence he had collected reports of 306 cases of tracheotomy performed in Chicago with 58 recoveries, or a percentage of 18.95. The average in 138 cases was 5 years and 1 month.

In contrast to these statistics the author reported 83 cases of intubation with 23 recoveries, or a percentage of 27.71. The ages were as follows:

No. of Cases.	Age.	Recoveries.
1	9 months	0
1	11 months	0
1	13 months	0
3	14 months	1
1	15 months	0
1	16 months	0
1	17 months	0
1	18 months	1
1	20 months	1
7	2 years	2
2	2 years and 1 month	1
2	2 years and 2 months	1
2	2 years and 3 months	0
3	2 years and 6 months	1
1	2 years and 9 months	0
12	3 years	2
1	3 years and 4 months	1
1	3 years and 6 months	0
11	4 years	5
1	4 years and 9 months	1
3	4½ years	0
9	5 years	4
6	7 years	1
1	7½ years	0
2	8 years	1
1	11 years	0
7	——	0
83		23

Average age, 3 years and 7 months.

It will be observed that 11 cases with 3 recoveries were under 2 years of age; 28 with 8 recoveries under 3 years; 14 cases with 3 recoveries between 3 and 4 years; 15 cases with 6 recoveries between 4 and 5 years; 9 cases with 4 recoveries between 5 and 6 years, and 10 cases with 2 recoveries between 7 and 11 years.

Many of these cases were young nursing infants,

and many were delegated to him because they were too young or too unfavorable for tracheotomy. Of the 58 cases coming under his own personal observation, 20 were actually moribund when the operation was performed, many of them entirely unconscious, and 40 were bad diphtheritic cases characterized by severe constitutional symptoms and extensive diphtheritic exudation upon the pharyngeal walls. In only 18 cases was the exudation in the pharynx slight, but in every case, without exception, membrane was expelled either in the form of thick muco-pus, shreds or large casts. In every case the operation was performed to prevent impending suffocation, and the cases pronounced hopeless without surgical interference.

Dr. D. A. K. Steele, in opening the discussion, said that of course the principal interest to the surgeon centres in the question of the performance of tracheotomy in croup or diphtheria. I have looked up some of the older statistics, in addition to those given by Dr. Waxham. The French seem to have led the way in the practice of tracheotomy. Trousseau in 1858 gave the statistics as about 25 per cent. of recoveries, and from later reports tracheotomy does not seem to have gained much. Dr. Solis Cohen, of Philadelphia, in 1883 recorded some 5,000 cases, and his per cent. was the same as given twenty-five years before by Trousseau, about one in four. More recent statistics show some improvement in tracheotomy, for example, Dr. Jacobi, of New York, published 1,000 cases in which he had a little better success, if I remember correctly, than those reported by Solis Cohen. A few days ago I saw a report of seventy-seven cases from the Boston City Hospital, with a recovery of twenty cases, about 25 per cent. In Chicago the statistics, as given by Dr. Waxham, are 306 cases with a recovery of about 19 per cent.; these are the most recent statistics I have found. Of course, in regard to the report of cases of tracheotomy, we have to bear in mind a very practical point—that is, that the unfavorable cases are not all reported. The majority of physicians who do a few operations and have not a successful result do not record their cases. In New York City some twelve years ago a surgeon reported 67 cases with 13 recoveries. He made operations on 100 additional cases before he had another succesful one; so there are curious mixtures and changes in the statistics of different operators.

Another point is that a good many surgeons report as successful cases that recover from the operation, but that die of some other affection or sequelæ, as this case reported by Dr. Waxham dying from albuminuria; all these cases are reported by tracheotomists as recoveries; but they are not recoveries from the diphtheritic croup. These points must be borne in mind. When we sum up, the statistics to-night would show a recovery of 27 per cent., which certainly seems to me to be a very favorable showing. In addition to these cases reported by Dr. Waxham, Dr. O'Dwyer has of late recorded 25 cases with a recovery of 24 per cent; taking all those cases into consideration, the Chicago record is ahead of the New York record by 3 per cent. In regard to the Boston City Hospital, where they had 25 per cent. of recoveries, we should bear in mind that those cases presumably have much better surroundings than we have in Chicago, or in general practice. There they have the best of nursing and immediate attention in case any mishap occurs, which in some cases in private practice might go unnoticed for many hours. With the favorable surroundings so far as the operation and the after-treatment are concerned, the reported recoveries of 25 per cent. are as favorable as we could expect.

Intubation is a comparatively new operation, but with the improved tubes (a serious defect in the construction of these tubes has been that the lumen was too small); I think that by enlarging the calibre of the tubes the percentage of recoveries would be increased. There would be less danger of rolling up the detached pieces of matter, and I think that expectoration would occur more freely. It is supposed to be necessary to have the tube extend down near to the bifurcation of the trachea, so as to prevent the curling pieces of membrane blocking up the opening, but I think they are longer than is necessary. The principal obstruction, we know, is at the larynx, the membrane below the trachea is thinner, smaller, and is not likely to curl up in this way. Theoretically the tube should be long, practically it might be shortened, and with the improved tubes we will get still better results.

A point in favor of intubation over tracheotomy is the rapidity with which it can be done, taking only the fraction of a minute to insert a tube in the hands of an experienced operator. We might also take into account the greater comfort of the doctor after the operation; the feeling of security with the laryngeal tube. I am constantly in dread after tracheotomy, watching and waiting, and seeing the little patients upon whom I have operated die one after another. Then the relief from dyspnœa seems to be quite as great after intubation as after tracheotomy. The relief from urgent symptoms is just as marked with the introduction of the laryngeal tube as with tracheotomy. In case we find intubation does not afford permanent relief it is no bar to tracheotomy subsequently, although where intubation does not relieve dyspnœa, tracheotomy will not relieve it; where stenosis is not relieved by the introduction of the tube, it does not relieve the dyspnœa.

Dr. W. E. Casselberry said his experience either with intubation or with tracheotomy has not been very extensive, but from it and from what he had gleaned from the literature of the subject, including the valuable paper presented to-night, he was very favorably impressed with the operation of intubation. The most favorable statistics of tracheotomy are those of not only the French, but more particularly of the large hospitals of France and Germany. In these institutions they have the fullest command of the patients in every way, the greatest attention can be paid them and the operation can be and is performed early. The most favorable statistics are those of Plenio (Konigsberg)— and of all the cases that were taken to the hospital but five escaped tracheotomy, showing that almost all were

subjected to the operation. The case of Dr. Ingals in which the membrane was removed from one of the bronchial tubes was a most brilliant one, but then intubation does not prevent tracheotomy from being performed afterwards. The forceps for the removal of the membrane through the mouth which the author has exhibited this evening is new; I have not much confidence in it, but perhaps it may be of value. In reference to the length of the tube, somebody has proposed that it should be shorter. I think it is the length of the tube which has rendered this operation successful over the operation of some eighteen or twenty years ago. It was invented by a French surgeon at that time, but the tube was only about ¾ of an inch long, sufficient only to reach into the larynx, where it excited irritation, and the operation was discarded as of no value; so that I think in the length of the tube we have an important feature. In reference to the introduction of the tube, if it is possible to practice on the cadaver it would be of great value; a minute is a long time when you are introducing a tube into the larynx of a child who is suffocating; you gag the mouth, introduce the forefinger as a guide to the larynx, follow it by the tube; the child stops entirely his feeble respiration, in a few seconds he becomes black in the face, and you are very anxious either to get the tube in or your finger out. If we bear in mind the instructions of the author of this paper to pass the tube under and not over the forefinger as a guide, I have no doubt we will be successful. And recollect that the curve into the trachea is a right-angled curve, so you must turn acutely and not obtusely or you will enter the œsophagus and not the trachea. The food of the patient is a most important point, when the tube is in liquids will frequently run into it and excite irritation.

DR. A. B. STRONG said: Before coming here I was prepared to endorse this operation to a great extent. I did not suppose the statistics were so favorable, but I am glad to find they are so. I have had quite a number of cases of intubation and of tracheotomy, and I must say I much prefer the introduction of the tube. However, not every case is adapted to the intubing; I think there are many cases where tracheotomy would be far preferable. We can feed a little patient after tracheotomy much better than after intubation of the larynx; to introduce a stomach tube would require the attendance of the physician several times a day. I have not yet given a fair trial to introducing the food into the rectum. I should not want a little patient that had suffered for three or four days before the operation to go without food; I like to feed my patients well, and certainly would not wish to starve them. There are three or four cases that have given me a good deal of information. The operation is new; we do not know all there is about it. One of the first cases that I had of true diphtheria, where intubing was done, was a little boy 4 years of age, taken sick five days before I saw him. The physician in attendance had given the child up, and I was called in. The little fellow was as near dead as any patient I had seen, but I would not have recommended tracheotomy in that case. The neck was badly swollen. Patient was cold, clammy, pulseless and cyanosed. Pupils widely dilated; apparently just on the verge of dissolution, mainly from profound blood-poisoning. I introduced the appropriate tube, and much to my surprise I nearly strangled him; indeed, for a moment I thought him dead. I drew the tube out and the child breathed a little bit better. It occurred to me that I might have crowded the membrane down. I introduced the tube again, with the same result; he was nearly strangled. I tried a smaller tube, but each time the tube went in the child nearly died. I laid him on the bed and surrounded him with dry heat. Brandy hypodermically. I did not suppose the child would live more than an hour, but to my surprise I received a telephone that he was alive and doing well ten hours afterward. I went to see him and found him with a good color, taking considerable nourishment. I called again in six hours just in time to see the child die. I had the privilege of post-mortem, and found exactly the condition of affairs I had anticipated. At the lower portion of the trachea I found a complete cast of that membrane crowded down. This case had been going on about five days when I saw it, and this membrane had been loosened in the meantime and so crowded down.

Another case was of a good deal of interest. A little girl eight years of age had a mild attack of diphtheria four days prior to my seeing her. Two days before I saw her the larynx first became involved, and gradually grew worse. The case was one of the most favorable for operation that I have seen. We introduced the largest sized tube and it remained in position for three days, and within 24 hours the lungs cleared up very nicely; at the end of three days and two hours the tube was removed with comparative ease, and I noticed that the child did not breathe as freely as I supposed she would. I remained about an hour, and during that time dyspnœa set in and the child nearly choked to death; we put in the one next in size and the symptoms were instantly relieved. The child wore that tube two days, when it died from bronchitis.

That case gave me this idea: the tube first introduced was as large as the parts would readily take in—it required a little force to introduce it—and it occurred to me that the tube was larger than was necessary. It remained there three days and two hours, squeezing the blood out from these parts, and when it was removed the sudden reaction caused the œdema of the larynx. The child wore that tube five days and a few hours, and until the last twelve hours of its life was getting along very nicely, except that it did not take the amount of nourishment I considered necessary. This operation is brilliant, and has a future before it, and I can heartily endorse it today. I am perfectly willing to try it, and I would prefer, in case of one of my own children, intubing the larynx to opening the windpipe.

DR. CHRISTIAN FENGER said: The subject is a most important one. As to the history of the operation, I would say that it is not a new one. A French surgeon, Loiseau, invented it in 1858, and to him belongs the idea. The instruments were, in the principle, about the same which we use now; there has

been modifications in details only. Tubeage was tried in France by Gros, but seems not to have found favor, although Bonehut recommended it without having used it himself. It was tried in Vienna by Weinlechner, who recommended it, condemned by Steiner and Ziemssen, and given up again. In reference to what was said about patients not swallowing at all for the first twenty-four hours, it seems to me it would be difficult to keep little children from drinking milk, or water perhaps, milk anyway, because they are always thirsty. There will thus be danger from foreign body—pneumonia (Schluck pneumonie). It might be that feeding bottles will obviate that danger. A second point is this: I saw a child treated by intubation die from loosened membranes closing the bifurcation. Whether the membranes were entirely loose or not, or loose above and attached below, is not materially important. The case convinced me that I would have felt safer with tracheotomy, because loosened membranes can be reached easier through the tracheotomy tube than through the larynx. As to the statistics, it is quite certain that the tracheotomy statistics are a little better than have been given here to-night. In the large hospitals in Germany the recoveries reach up, in the last few years, to 31 per cent. At the same time, when intubation shows 27 per cent., that is in itself reason enough for a trial. All these points are not exactly exclusively in favor of intubation, but like Dr. Strong, I should first try the tube, if it was my own child, and watch the patient incessantly, with the tracheotomy instruments on the table to be ready at any time when needed to resort to tracheotomy.

Dr. S. Stockton was in favor of intubation.

Dr. R. G. Bogue said: There is much to recommend intubation I believe. The testimony we get is certainly enough to recommend the operation and to establish it as a practical procedure and one worthy of trial. It affords probably as much relief for the urgent symptoms, the one for which tracheotomy would be resorted to, as tracheotomy would; and the length of time that the tube is to be worn will be shorter than the tracheal tube. There are reasons why it should; from the pressure of the tube upon the membrane the presence would be likely to cause some disintegration of the membrane, and in that way the membrane would be taken away or gotten rid of sooner than without the pressure. The only objection—at least the one objection which occurs to me from what little I have seen, and what we hear, is the matter of fluids passing through the tube into the trachea and into the respiratory passages while attempting to feed the patient. That is an annoyance and probably a detriment. It also, I suppose, will deter children from trying to take fluids. Little children soon learn to avoid things which hurt them, and I should think that it would be a factor in preventing the free feeding of children. Now it may be that the introduction of fluid into the air passages may not be harmful, for as recently as to-day I saw in some report from New York the recommendation that in case of tracheotomy, where there is obstruction below the tube to pour fluid, by teaspoonful, for instance, into the tracheotomy tube, letting it run down into the air passages for the object of liquefying and softening the membrane and getting rid of it in that way. That I think, is recommended by Dr. Geo. F. Shrady, who had practiced it recently with apparent benefit.

The question of introduction of fluid into the air passage may not be a tangible objection. But we would perhaps prefer to select the kind of fluid we would put into the trachea instead of milk or beef tea, or anything of that kind. The operation of tracheotomy has been resorted to for a great many years, with varying success by different operators and in different localities. Trouseau years ago, reported his success as about one in three, or three to four, from a very large number of cases. In the cases we have heard this evening as compared one with the other, tracheotomy hardly holds its own. The number of cases in tracheotomy no doubt are not all reported, but a fair proportion of them probably having been reported. While tracheotomy is certainly of great benefit, and has proved itself to be such in this class of diseases, it is subject to its disadvantages and annoyances; but so also has intubation its annoyances both to the patient, the friends and the doctor.

Dr. C. T. Parkes: I have nothing but words of commendation as far as Dr. Waxham is concerned, for his persistence in presenting this method of O'Dwyer to the profession of this city. I have nothing to say about intubation; I have no experience, never having seen a tube used. I have had a little experience in tracheotomy, and so far as my personal experience goes, I shall stick to that until I have reason to change it. My experience extends over thirty-one cases of tracheotomy. I had the honor to report to this society on previous occasions the first fifteen cases; eight recovered and seven died. I have collected the names and residence of sixteen more, and of these ten have recovered and six died. That is a pretty fair showing. I cannot explain, do not pretend to explain this percentage of recoveries. You will find in the literature of tracheotomy throughout the world that some operators have a good fortune in that respect. I do not think it an unusual or peculiar fact that the doctor relates about relief given to the patient when you open the trachea after stenosis; cases in which the patients are unconscious, black in the face, and are revived by the introduction of the laryngeal tube, such a result is to be expected. I see by the report very few if any of these cases recover after intubation; I know I have seen just such cases recover after tracheotomy. I have never had any trouble from the swallowing of fluids or food of any kind; I have seen the fluids come out of the opening of the tube, and have had the physician in charge reporting that we had unfortunately made an opening into the œsophagus; those cases have never given trouble, and in a few days subsided. There is one peculiarity about these cases of intubation, that Dr. Bogue has explained, the pressure of the tube causing an early disappearance of the membrane. There have been no cases that I have seen in tracheotomy, where the tube could be removed under six days; in two cases it was three or four months before the tube was removed; I have never seen the trachea

opened so far, without seeing false membrane come out of the trachea. If I were enabled to remove the tracheotomy tube inside of six days or a week, I should think that to be a case in which no membrane was found in the trachea and one, in all probability, if I had waited a few days, in which the patient would have gotten well without any operation. There is something peculiar and interesting in the ages of these sixteen cases, the youngest being 3½, the oldest 37 years of age. I think the cases in which stenosis has been complete, and required an opening of the trachea, have been very few in the adult. One of these operations was upon a woman after she had been sick some four or five days with a bad case of pharyngeal diphtheria. At the time I saw her she was absolutely suffocating, and I was called for the purpose of performing tracheotomy; I did the operation under very poor surroundings and yet the patient recovered. The tracheal opening became diphtheritic. Another case was 32 years old. The patient died on the table; this accident has happened in quite a number of cases. I never had any trouble with the children and certainly expected less with the adults, as in the latter the operation is much more simple than in the child. This patient stopped breathing before the trachea was reached, and after it was opened it was impossible to restore respiration. As far as I am concerned, I can say nothing about intubation, I think it is very likely I shall purchase a tube. I don't know whether or not it is such an easy thing to intube the larynx; I think I have cognizance of three cases not in the doctor's list that proved fatal, in which some difficulty was met. One 3 years old died the day after. One 7, in which no relief was given, as the membrane seemed to be pushed ahead of the tubes, and one in which no relief being given, the attempts to remove was complicated by the child swallowing it and being buried with the tube in its stomach. Another, a young lady 17 years old. This patient recovered; she was relieved immediately after the introduction of the tube, and rested very comfortably until the next day when she complained of a pain in her stomach. In the evening of that day she passed the tube from the rectum. I allow you to judge of the necessities requiring its use, so I don't know that I can agree with these gentlemen and say the operation is simple. We know what tracheotomy amounts to, and I am sure I would not feel right about it, I should be haunted with the idea of not doing my whole duty, if I left a child 7 years old go without doing tracheotomy where I felt satisfied, after this tube was introduced there was no relief given. I think tracheotomy will always have a place. I have been asked so many times how I come to have this record of tracheotomy, that I think it is due me to say one thing more; I do not know how to explain it. I believe no other operation for tracheotomy should be done but the high operation. The trachea should be opened at the highest ring, and if necessary, divide part of the cricoid, as I have done, or all of it. Certainly the after care has a great deal to do with the recovery, and I do not believe there are any persons so wanting in intelligence, but if you give them instructions carefully they will carry them out. So far as my experience goes, the surroundings have made no difference, even if it be a house of only one room with the whole family living in it, and several other animals besides. I think the room should be kept at a temperature above 80; there should be no attempt to fill it with moisture, the room should be so hot as to be decidedly uncomfortable for all the friends, for the first twenty-four hours. During this time (twenty-four hours), the inner tube of the trachea should be removed every hour whether the patient seems to need it or not, because that is the time when the deep seated trouble in the organs below starts. After that time I do not believe the tube should be removed oftener than seems absolutely necessary, and I do not believe that mucus can be prevented from drying by the introduction of foreign bodies. Every time the tube is removed it should be reintroduced damp, or wet in a mild solution of soda, and occasionally without taking out the inner tube, drop into the trachea a few drops of this same fluid so as to keep the end of the tube as moist as possible. No foreign bodies of any kind should be introduced into the trachea after you are quite certain all the pieces of membrane had been detached and removed at the time of the operation. The introduction of such an innocent little thing as a feather or sponge I am satisfied does more harm than good. I am willing to admit that in one case which showed every sign of recovery, the tube was moist and the cough was moist, and I had every reason to believe it would get well, but owing to over anxiety I kept poking feathers into the trachea and had the friends do the same, until I got up an inflammation of the trachea proper around the tube, which I am satisfied was the cause of the fatal issue. I do not think there should be any interference; the least possible interference is the best plan of cure.

DR. H. T. BYFORD said: I wish to call attention to one fact; that is, in the statistics of hospitals tracheotomy shows about as favorably as intubation, although in private cases the safety, simplicity, and absence of formidableness of intubation makes it already the popular operation. As I have said before this, tracheotomy is an operation for hospital practice, where the difficulties can be overcome, and where its just claims for precedence in particular cases must always obtain consideration.

DR. F. E. WAXHAM, in closing the discussion, said: I believe every tracheotomist will entertain an opinion in regard to tracheotomy according to the success which he has attained. If a physician has saved every patient upon whom he has operated, he will feel that the operation is good enough, and will be perfectly satisfied; if he has saved a large proportion of his cases he will be loth to accept anything new; but the great majority of physicians, who have either met with unvarying failure or inferior success, will have a poor opinion of the operation. English writers seem to be losing faith in tracheotomy, for Holmes, in his "System of Surgery," says: "English medical men seem very generally to incline to the opinion that the operation, if not to be recommended, is at least justifiable, but to be successful it must be performed at a very early period of the

attack." Referring to Professor Parke's remarkable record of tracheotomy, I can not help feeling that his cases could not have been so unfavorable. I cannot believe that he had many young infants to operate upon. I would like to ask the age of his youngest patient?

DR. PARKES: Three and a half years.

DR. WAXHAM: That explains why his record has been far more successful than that of many physicians. I believe that if tracheotomy were performed upon every case without reference to age, condition, or type of disease, we would not save more than one out of every ten or twelve. Many physicians select their cases; indeed, I know of some who *will not* operate upon a child under three years, and of others who will not operate upon diphtheritic cases on account of the known fatality occurring after tracheotomy in these cases.

In regard to the difficulty of performing intubation, I would say, that any of you who attempt the operation upon a child without practice upon the cadaver, will certainly be sorry for it. I have known of four physicians who have failed completely. In regard to the patient to whom the last speaker referred, the young lady with the tube in her stomach, that case I am afraid was not in my record. I, unfortunately, or perhaps fortunately, did not secure the patient.

Dr. Parkes has stated that after tracheotomy, if he were able to remove the tube in less than six days he would have concluded that there could have been no membrane within the larynx, and that if he had waited a few days longer the patients would have recovered without the operation! May I be pardoned for feeling that the natural inference would be, that in these cases of intubation because the tube has frequently been removed on the third, fourth or sixth day, that there could have been no membrane present and that the operation was unnecessary? In reply, I would state that in every case coming under my observation false membrane has been expelled when the tube was introduced. The reason why the laryngeal tube can be removed earlier than the tracheotomy tube is, that more or less membrane is detached when the tube is first introduced, and second, the pressure of the tube and the frequent coughing assists in dislodging the membrane; while after tracheotomy little or no air passes through the larynx until after the removal of the tube, and there is nothing to cause the dislodgement of the membrane.

In regard to feeding the patient: Many of my patients have taken abundance of nourishment without difficulty. Occasionally, however, there will be one that will not take a sufficient amount. It will depend a great deal upon the size of the tube. If we use a tube larger than is appropriate for the age of the patient, it will not always fit perfectly into the cavity of the larynx, and consequently the epiglottis will not close accurately over it. In a case such as Dr. Strong has referred to, where the membrane is pushed down ahead of the tube, the trachea forceps would be very useful in removing it.

There are a great many dangers from tracheotomy that are never met with from intubation; but we rarely hear of them. I have learned of one physician who attempted a tracheotomy on a child four years old. Cutting down hastily he severed large blood-vessels, and losing his head at the sight of the copious hæmorrhage, at once sewed up the wound, while the child, almost with his last breath, wanted to know if they were going to cut him any more. Another physician, in cutting down hastily in order to open the trachea, missed it, and accidentally severed the carotid artery. Indeed, the history of tracheotomy is replete with horrors, but we do not hear of them. In the hands of experienced surgeons, who are cool and collected, the operation may be a simple and safe one; but in the hands of the inexperienced and the nervous, performed, as it frequently is, in the dead of night, it then becomes a formidable, yes, a dangerous procedure. Intubation, on the other hand, can be performed quickly, in a very few seconds, and without the dangers attendant upon tracheotomy.

NINTH INTERNATIONAL MEDICAL CONGRESS, TO BE HELD IN WASHINGTON, D.C., COMMENCING SEPT. 5, 1887.

PRELIMINARY ORGANIZATION.

SECTION XIV. PUBLIC AND INTERNATIONAL HYGIENE.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—I have the honor to submit the following with reference to questions N and O, relative to *Quarantine*, proposed for discussion by the Fourteenth Section of the Ninth International Medical Congress:

The idea which I had in propounding questions N and O, was for the purpose of bringing about a grand union of action on the part of all civilized nations on the subject of *Quarantine*, so as to advance the cause of medical science and humanity.

As matters now stand commerce is made to bear the *brunt* of *Quarantine*. The unfortunate ship stricken by pestilence suffers detention and in some cases immense expense. The unfortunate crew and passengers, who have committed no crime, are treated like *outcasts* and *outlaws*. They are supposed to have no rights which humanity is bound to respect.

Commerce bears in its bosom the germs of civilization; commerce establishes and sustains the markets of the world; commerce is the agent for the dissemination of all that is grand and noble in the life and development of our common humanity; and the brave and hardy sons of commerce have in all ages and in all times rallied to the defense of their native lands.

Is it just, is it right, that the pestilence-stricken ship should bear all her expenses, and suffer all that the safety of man may demand and that avarice and cowardice may suggest?

Has not civilization advanced to that stage, and are not the great civilized and Christian Powers of the world (the United States of America, the British Empire, France, Germany, Austria, Russia, Italy, Spain, Portugal, Denmark, Norway and Sweden) sufficiently strong, wealthy and enlightened to estab-

lish a uniform system of quarantine which should embrace:

1. A system of mutual confidence; a uniform system of registration of diseases and deaths.

2. A system of regular health reports, giving detailed statements, weekly, monthly and annually, and if necessary daily, of all matters relating to the public health—to the sanitary welfare of nations. By the use of the telegraph all civilized nations could be kept informed of the appearance, spread or arrest of any contagious or infectious disease, as small-pox, cholera, yellow fever, etc.

3. A uniform system of quarantine, adapted, of course, to the climate, latitude, and endemic or epidemic diseases.

By a *uniform system* we mean uniformity in the construction of quarantines, and their administration, and the uniform assumption by the great Governments of the world of all quarantine expenses of cleaning, fumigation, and the treatment of the sick. The only expense necessarily borne by the pestilence stricken ship, or by the *suspected* ship, detained in quarantine, would be the loss of time and the necessary expenses for food of crew and passengers.

As quarantine is now conducted, the owners of ships as well as the passengers and crews suffer, often unequally and unjustly, for the general good.

The two questions are complementary one to the other; and to make this relation plain we re-state them.

N. Shall the General Governments of the civilized world assume control of all the quarantine systems, and by mutual consent reduce the entire subject of quarantine to order, and apply the most improved methods of sanitation and disinfection?

O. Shall the Government of the United States assume charge of the entire subject of quarantine (within her own borders), and relieve the individual States of all further responsibility for not merely foreign, but also inter-State quarantine?

O flows necessarily from N; to be of any practical value the discussion of N must precede that of O; O cannot be construed as relating to anything but the United States of America and its individual States, and does not refer to foreign States, only so far as one of the contracting parties under proposition N.

I hope that the high purpose by which I am actuated in propounding these questions is clear—the discussion is for all civilized nations, and the earnest hope is entertained that great good will grow out of it for the protection of commerce, the advancement of medical science and the welfare of humanity.

Your obedient servant,

JOSEPH JONES, M.D.,

President Section XIV, Public and International Health, Hygiene, Provisional Organization Ninth International Congress.

156 Washington Ave., New Orleans, La., July 7, 1886.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

DR. A. M. POLLOCK, of Pittsburgh, Pa., has been appointed Secretary of the Section of Surgery and Anatomy of the American Medical Association for the present year.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

(Concluded from page 55.)

An Excursion to the Catskills—The Ulster County Medical Society—Mr. Henry Bergh on Pasteurization.

But to return to our medical excursion party. The ride in the cars up through Stony Clove was a most picturesque and charming one, and it was rendered all the more attractive by the masses of wild laurel in full bloom all along upon the mountain sides. The finest part of the Clove is that near its upper entrance. Here the depth between the two great mountains—Hunter on the one side and Spruceback on the other—is extremely narrow, and the rocky and precipitous cliffs, covered with stunted evergreens, tower to a vast height on either side of the road. Those on the Hunter side, particularly, form an almost perpendicular wall, and present an aspect of wild and indescribable grandeur. It is here that the ice-cans, where ice remains throughout the entire year, are found; and in summer the temperature is always considerably lower at this point than in the surrounding region. After leaving the Clove, the scenery is not less beautiful, and the romantic terminus of the railroad, on the shore of one of the two lovely Catskill Mountain lakes, seems a fitting place of ending for so inspiring a ride. Stages are in waiting for the party, and by six o'clock all are safely landed at the hospitable doors of the great Hotel Kaatskill, whose

"arces
Alpibus impositas tremendis,"

white and gleaming in the sunshine, we had long been watching from afar.

With keen appetites we sat down to a bountiful supper, and afterwards wandered off to enjoy the declining day.

——— Sol ubi montium
Mutaret umbras . . . amicum
Tempus argens, abeunte curru.

At half-past eight the scientific session was resumed, and Dr. H. Van Hoevenberg read a paper of medico-

historical interest in regard to the City of Kingston. The Provincial Congress, which was obliged to leave New York on account of the arrival of the British army, assembled at the court-house in Kingston March 6, 1776, and immediately proceeded to organize a form of government for the State. The first constitution of the State of New York was probably adopted here on April 20, and two days later it was read aloud to the people by Robert Berrian, Secretary of the Convention, standing on a barrel in front of the court-house.

The most important business before the Convention having been finished, the trial of a number of Tories was taken up, and two of them were hung. Up to a year ago a large oak tree, standing just on the verge of the town, was known as the "Tory's oak," and was said to be the tree on which a number of Tories were hung during the Revolution.

On July 11 an election was held, and George Clinton was chosen Governor. Among the persons present at the inauguration of Governor Clinton was Dr. Luke Kiersted, who at that time was a very prominent man in the community.

The result of the action of the Convention at Kingston, and the proclamation of Clinton as Governor, was that the British sent a force of about 1,600 troops, under General Vaugh, who landed at the mouth of the Rondout Creek, and marched up to Kingston, where they immediately proceeded to plunder and burn the houses and barns of the inhabitants. Most of the able-bodied men of the place were with the Continental army in the Highlands, and although a detachment was sent north to protect Kingston, it did not arrive until the work of destruction was nearly completed.

The Ulster County Medical Society was organized in Kingston July 1, 1806, with Dr. James Oliver as President, and Dr. Luke Kiersted Vice-President. In looking over the records of the Society it is found that even in those days the profession was troubled with quacks, and one of the first things that it did was to take action concerning a number of illegal practitioners. At the annual meeting in 1807 it was voted to choose some subject for debate at the succeeding one, and that the President should appoint some one to open the discussion. Accordingly "Fever" was the subject selected, and Dr. Samuel H. Phillips was appointed for the purpose. It is found that as Dr. Phillips did not appear at two subsequent meetings, he was fined $5; and the speaker thought that this might perhaps be a good precedent to follow at the present day under similar circumstances.

Dr. Van Hoevenberg said, in conclusion, that there were inscribed on the roll of the Society the names of some who have been men of marked ability, men who, with the opportunities which would have been afforded them in one of the large cities, would have risen to high position in the ranks of the profession. But they were content to live the life of usefulness that opened before them, doing all the good that they could to those around them, often at the cost of hardships and sacrifices; many times getting little, if any, pay, and sometimes more curses than thanks as their reward.

The opponents of Pasteur are not likely to have their cause materially advanced in the eyes of the general profession by the following expression of opinion by Mr. Henry Bergh, which was given in connection with some comments on the recent experiments on dogs by Dr. Spitzka, made for the purpose of showing that so-called cases of hydrophobia could be produced at will by the introduction of various foreign substances into the brain after trephining: "Pasteur is in the way of doing great harm to mankind. He has never proved that he treated a case of pure hydrophobia. He has never cured a case of hydrophobia. Yet, by creating a scare, he has worked upon the public mind so that people intelligent in most things have been convinced that he has made a great discovery. His discovery has a parallel in Jenner's, who has done more harm to the world than any other man. What can be more senseless and illogical than to put into the blood of a child the discharge from a diseased animal? It doesn't prevent disease, but spreads it. A great number of the cases of cancer, scrofula and consumption have appeared as a consequence of this method of treatment, by which poisonous matter thrown off by one body is infused into another. Such diseases have not spread among savages or among people not subjected to this treatment, and I am amazed that persons of intelligence should submit to it." The Quixotic President of the Society for the Prevention of Cruelty to Animals seems to be totally unaware that he is paying the highest possible tribute to the preventive treatment of Pasteur by coupling his name with that of the immortal Jenner. P. B. P.

BOOK REVIEWS.

A Text-Book of Medical Physics. For the Use of Students and Practitioners of Medicine. By John C. Draper, M.D., LL.D., Professor of Chemistry and Physics in the Medical Department of the University of New York, etc. With 377 Illustrations. 8vo., pp. xxxii, 733. Philadelphia: Lea Brothers & Co. 1885. Chicago: A. C. McClurg & Co.

We cannot too earnestly hope that this, the first work on medical physics in this country, is the forerunner of a new era in medical education. Thus far our colleges may, with but few exceptions, be said to have "thrown physics to the dogs." As a demand will create a supply, so it is to be hoped that in this case a supply will create a demand for a good text-book on medical physics.

Those who have studied Ganot and Deschanelle will note the conspicuous absence of mathematical formulæ and problems in reading Dr. Draper's work; even the familiar one which is supposed to prove that an air-pump cannot be completely exhausted is omitted; and mathematical formulæ are even omitted from the chapters on light. And in this connection it may be said that one of the best chapters in the book is that on the microscope, which treats well of dry objectives, immersion objectives, of the prepara-

tion of slides and covers, of objects, of hardening and section-cutting, injection, staining, chemical testing, and of everything else pertaining to the use of the microscope. The book may be regarded as a most excellent addition to truly medical literature.

NECROLOGY.

DR. SIMON STRAUSSER.

DR. SIMON STRAUSSER, of Chicago, Ill., died at his residence in that city, April 22, 1886. He was born in Enerbach, Bavaria, in 1833. He received an academic education in his native country, and where he began the study of medicine at the Polytechnic Academy of Wurtemburg, though he did not finish his course. In 1848 he emigrated to America, and a year later attended lectures at the Jefferson Medical College, serving at the same time as an interne in one of the hospitals. While so engaged he made the acquaintance of a student from Virginia who invited him to visit his family at Alexandria. This invitation was accepted, and while there he made many friends who assisted and encouraged him, and he began the practice of medicine without having received a degree. In 1854 he was married to Miss Clara Tupper, and in 1857 removed to Philadelphia where he practiced until 1867, when he removed to Chicago, Ill. He there acquired a supporting practice and became a member of the Chicago Medical Society in 1879, receiving in the same year the degree of M.D. from the Rush Medical College. He was a laborious student, a consqientious and careful practitioner and devoted to his profession. Dr. Strausser lost his first wife in 1862, and in 1869 was married to Miss Pauline Schlaus, of Pittsburgh, Pa., who with three children, survive him. For the past year the doctor was conscious of failing health, but kept attending to his duties as best he could, and worked up to ten o'clock of the night on which he died. His death was sudden, and caused by angina pectoris. He was a member of the American Medical Association, attending the meeting in 1883 at Cleveland. Resolutions of respect to his memory were adopted by the Chicago Medical Society, May 3, 1886. J. M. T.

MISCELLANEOUS.

HEALTH OF MICHIGAN.—For the month of June, 1886, compared with the preceding month, the reports indicate that intermittent fever increased in prevalence. There was no marked increase or decrease of any other disease. The temperature was higher, the absolute humidity considerably more, the relative humidity and the day ozone were about the same, and the night ozone was more.

Compared with the average for the month of June in the eight years, 1877–1886, remittent fever, measles, intermittent fever, pneumonia, bronchitis and diphtheria were less prevalent in June, 1886. The temperature was slightly lower, the absolute and the relative humidity were about the same, the day ozone was more and the night ozone was considerably more.

Including reports by regular observers and others diphtheria was reported present in Michigan in the month of June, 1886, at forty seven places, scarlet fever at forty-eight places, typhoid fever at six places, measles at sixteen places, and small-pox at three places.

Reports from all sources show diphtheria reported at four places less, scarlet fever at nine places more, typhoid fever at the same number of places, measles at five places less, and small-pox at three places more than in the preceding month.

OFFICERS OF STATE SOCIETIES:—The Ohio State Medical Society at its 41st annual session at Akron, June 2, 3 4, 1886, elected the following officers: President, Thomas MacEbright, of Akron; First Vice-President, J. M. Weaver of Dayton; Second Vice-President, W. S. Battles, of Shreve; Third Vice-President, X. C. Scott, of Cleveland; Fourth Vice-President, Jesse Snodgrass, of Kenton; Secretary, G. A. Collamore, of Toledo; Assistant Secretary E. C. Bush, Zanesville; Treasurer, T. W. Jones of Columbus. The next meeting will be held in Toledo.

The Kentucky State Medical Society at its 31st annual meeting held at Winchester, June 23, 24, 25, 1886, elected the following officers: President, W. H. Wathen, of Louisville; Senior Vice-President, J. M. Harwood, of Shelbyville; Junior Vice-President, J. H. McKinley, of Winchester; Permanent Secretary, J. Steel Bailey, of Stanford; Assistant Secretary, T. C. Simpson, of Bardstown; Treasurer, Edward Alcorn, of Hustonville; Chairman Committee of Arrangements, J. G. Brooks, of Paducah. Next place of meeting, Paducah the third Wednesday, in June, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 26, 1886, TO JULY 2, 1886

Col. Thos. A. McParlin, Surgeon, granted leave of absence for two months, with permission to apply for an extension of one month. (S. O. 146, A. G. O., June 25, 1886.)

Lt.-Col. Chas. Page, Surgeon, leave of absence extended ten days. (S. O. 146, A. G. O., June 25, 1886.)

Lt.-Col. D. L. Magruder, Surgeon, granted leave of absence for two months, to take effect on or about July 1, 1886. (S. O. 146, A. G. O., June 23, 1886.)

PROMOTIONS.

Lt. Col. Jos. B. Brown, Surgeon, to be Surgeon with the rank of Colonel, Jan. 24, 1886.

Major Anthony Heger, Surgeon, to be Surgeon with the rank of Lieut. Colonel. Jan. 25, 1886. (Circular A. G. O., June 25, 1886.)

Major Richard S. Vickery, Surgeon, assigned to duty as Surgeon in charge of Army and Navy General Hospital at Hot Springs, Ark. (S. O. 150, A. G. O., June 30, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JULY 3, 1886.

Green, E. H., P. A. Surgeon, ordered to Naval Laboratory at Brooklyn, temporary duty.

Brown, J. M., Medical Director, member of Retiring and Examining Board.

Ogden, F. N., Asst. Surgeon, ordered to "Juniata."

Siegfried, C. A. Surgeon, three months' leave abroad.

Hall, J. H. H., P. A. Surgeon, detached from Museum of Hygiene, and ordered to Naval Hospital at Brooklyn.

Wentworth, A. R., Asst. Surgeon, detached from "St. Louis" and ordered to "Brooklyn."

Decker, Corbin J., Asst. Surgeon, ordered to "St. Louis."

Berryhill, T. O., Asst. Surgeon, ordered to Museum of Hygiene.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, JULY 24, 1886. No. 4.

UNITED STATES ARMY MEDICAL DEPARTMENT

ORIGINAL ARTICLES.

ELECTROLYSIS IN GYNECOLOGY; WITH A REPORT OF THREE CASES OF FIBROID TUMOR SUCCESSFULLY TREATED BY THE METHOD (WITH DISCUSSION).[1]

BY FRANKLIN H. MARTIN, M.D.,

OF CHICAGO.

PROFESSOR OF GYNECOLOGY IN CHICAGO POLICLINIC; FELLOW OF THE CHICAGO GYNECOLOGICAL SOCIETY, ETC.

(*Concluded from page 68.*)

6. *Laceration of the Cervix Uteri.*—This is a condition which of course cannot be repaired by electrolysis. I hope I will not be considered as riding a hobby, however, if I assert that temporary relief can be obtained from the results of laceration of the cervix by the proper use of electrolysis. The painful consequences following this condition of laceration are due in great part to formation of cicatricial tissue in the fissure, to degeneration of the mucous follicles, to obstructed circulation in the neck, and to connective tissue changes, and a congestive hypertrophy.

By experience in just this condition, when the privilege of trachelorrhaphy was withheld, or when for some other good reason I was deterred from operating, I have obtained very gratifying *temporary* results. I emphasize *temporary*, because time enough has not passed since the operation to warrant me in saying permanent. However, because of the nature of the condition I do not expect to get permanent relief in these cases, although in two typical cases I have seen complete relief which has lasted four and six months respectively.

Case 6.—The first of these was that of a primipara who had been confined in the country two years before she consulted me. The laceration was a deep bilateral fissure, with hypertrophied, angry, congested appearing lips, with a large quantity of bloody albuminous discharge hanging from their surfaces. The patient presented all the subjective symptoms usually accompanying such a condition, including general anæmia and nervous irritability, with menorrhagia. The treatment, besides good feeding, was hot water vaginal injections, and a thorough application of galvanism directly to the cervix. The cervical cup was used for the internal electrode, with an occasional application to the canal with the bulb electrodes. The patient improved rapidly from the first. The hypertrophy rapidly subsided, the hypersecretion was checked immediately, and in five weeks the patient was discharged. At this time, as she was in the best possible condition for a trachelorrhaphy, I rather insisted upon the operation, but she preferred to "run her chances," inasmuch as she was, to all personal feelings, well.

Case 7.—The other uncomplicated case is one that came from a prominent specialist, and had been treated in preparation, I judged, for a trachelorrhaphy, although the operation had not been suggested to the patient. She had been under treatment for three months, receiving local applications from two to three times a week. She had improved but little after the first month. The cervix had a deep bilateral laceration, the left extending to the vaginal junction. The cicatricial plug was almost like cartilage, and a general hyperplastic condition of the whole cervix existed. The case was treated exclusively, with the exception of small doses of arsenic, by electrolysis. At the end of two months the cervix was soft and pliable, the two lips easily coming together, much reduced in size, and the congested condition had disappeared. The patient considered herself cured, although I cautioned her that the symptoms might return.

This method of treatment is so prompt in relieving this condition that it is destined to become very popular as a temporary measure, or as a general measure when there are insurmountable barriers to an operation. As a preparatory measure for trachelorrhaphy it surely possesses very superior claims.

8. *Ovarian Cysts.*—I have had no experience with electrolysis in this condition. And with the present successful standing of ovariotomy, I think it will gain very little popularity in that direction. Dr. Paul F. Mundé[45] said recently in writing on the subject: "Many of us may still remember the claims of Dr. Frederick Semeleder, of Mexico, some eight years ago, that ovarian cysts were curable by electrolysis, and may also recall his experiments with the method here, and his disastrous results." Dr. Mundé still further says: "I made it my object at that time to collect all the cases in literature of electrolysis for ovarian tumors, and to compile the cures and failures, and published a full article on the subject in the *Gynecological Transactions* for 1877, vol. ii. I collected fifty-one cases, of which only twenty-eight might credibly be considered cured; nine died, and fourteen were utter failures. The ratio of mortality and failure was 45 per cent., or double the mortality

[1] Read in the Section of Obstetrics and Diseases of Women at the Thirty-Seventh Annual Meeting of the American Medical Association, May 5, 1886.

[45] American Journal of Obstetrics, December, 1885.

from ovariotomy, even in the hands of our less successful operators of to-day." He adds, "That settled the question of electrolysis."

While Dr. Mundé's statistics do not show very well for electrolysis, we must remember before giving it an unqualified condemnation that electrolysis as a surgical procedure in ovarian tumors is in its infancy compared to abdominal section in the same condition; and we must also remember that his statistics exhibited but nine deaths in fifty-one cases, or a mortality of less than 18 per cent. Of course failure to cure the other fourteen by electrolysis did not preclude the last alternative, ovariotomy. I do not believe that the first fifty-one cases of ovariotomy performed exhibited anywhere near as good a record as Dr. Mundé's statistics show for electrolysis. Let us wait, therefore, for further developments before passing too severe judgment.

9. *Peri-Uterine Hæmatocele.*—Dr. Apostoli[46] recently described a method of treating this condtion by means of negative-galvano-puncture as follows:[47] "The chemical caustic action of the continuous current is utilized in making an opening into the tumors. The opening thus made is, in character, a non-retractile fistula, with tendency to remain open, and with adhesions between the pathological cavity and the external mucous membrane. . . . . The advantages of this method are that, on account of the adhesions formed, the danger of opening is lessened, and the cicatrix left by the negative eschar is slight and non-contractile. A further after-effect of this method of utilizing the chemical caustic action of this current is that the nutrition of these pathological cavities is modified, leading to retrograde metamorphosis."

Apostoli has treated one case by this method, and the excellent results obtained lead him to the following general conclusions: "The method is safe, quick in action, and modifies the usual prognosis. The method is, in action, double—it has a surgical effect and a medical effect." He adds: "It is applicable alike to hæmatocele, abscess, fibromata, interstitial myomata and extra-uterine cysts.

10. *Fibroid Tumors of the Uterus.*—Fibroid tumors have been reported cured by a process of electrolysis by a number of operators.[48] The popular method heretofore adopted has been the electro-puncture. This is accomplished by means of needles made of steel, silver or gold, of different lengths according to the requirements of the case to be operated upon (figure 6). These needles are insulated to within a short distance of the point. They are made so that they may be connected with either pole of the battery by means of flexible wires.

Method of electro-puncture: If a subperitoneal fibroid tumor is to be operated upon, a point is found, if possible. where a needle from one or both poles of the battery can be introduced into its substance without wounding the peritoneum. This often can be accomplished by passing the needle through the substance of the uterine walls, and entering the tumor at its attachment to the uterus. Sometimes the needle only from one pole of the battery is used, while the circuit is completed by applying the electrode from the other pole, which should be a very large flat sponge electrode (figure 7), upon the surface of the body in close proximity. If two needles are introduced, one from each pole, they should not come in contact at any point. Sometimes in large abdominal tumors the needles are thrust through the abdominal walls into the substance of the growth. In any of these procedures it is usually necessary to administer an anæsthetic. The strength of the current must depend upon the manner of application, and what is to be accomplished. If both poles are connected with needles, and the needles are buried in large tumors, a greater strength of current can be used than when one electrode is on the skin. The current is usually increased in strength one cell at a time until the negative needle is well loosened by the chemical decomposition of the current. The séance should last from ten to fifteen minutes, and be repeated in ten days if necessary. Three or four applications well carried out are sufficient usually to decidedly reduce large fibroids. The above method is substantially the one adopted by Dr. J. N. Freeman, of Brooklyn, and Dr. Menière, of Paris.

Another method adopted and described by Apostoli, which is only applicable for interstitial and submucous fibroids, is a mixed treatment of the faradic and the galvanic currents. His manner of application of the current is such that the current will pass through the largest part of the tumor. The needles are not used. His idea is to get the effect of the two currents—the chemical effect of the galvanic, and the contractile effect of the faradic.[49]

The treatment which I have adopted is the same as that already described for removal of inflammatory exudates, the reduction of the hyperplastic uterus, the absorption of cicatricial tissue, etc. A current of high tension and small quantity is used. A current of this quality is applied as strong as the patient will bear. The negative electrode is applied in the vagina, the uterus, or the rectum, while the positive pole is applied on the skin in a position that will cause the current to pass through the largest diameter of the growth. The internal electrode is metal, and may or may not be covered with chamois. The séance should last from ten to twenty minutes, according to the susceptibility of the patient and the strength of the current. While this method may not be as applicable for very large tumors as electro-puncture, on small interstitial growths its action is very prompt and satisfactory.

My experience in this treatment is confined to three cases of fibroid tumors. The cases are so typical and the histories so complete, and the effect of treatment so prompt, that I shall look for much good to come from the treatment of fibroids by this method.

Case 8 is that of a young married lady, aged 25,

[46] Quotation from American Journal of Obstetrics, April, 1886.
[47] Association Française pour l'Advancement de Science.
[48] See another portion of this paper for authority.
[49] Dr. Apostoli has of late adopted the strong galvanic current in the treatment of fibroids.

who had been married five years. I was first called to her because of acute neuralgia of the heart. At this time I learned that she had been troubled with excessive menstruation for nearly two years. She afterwards consulted me at my office. She complained of the excessive menstrual drain, excessive backache, pressure on bladder, and hæmorrhoids. She was anæmic and very irritable. Upon examination I found the cervix low in the pelvis, the uterus apparently large, with a patulous canal. Further examination showed what seemed like a large fundus in Douglas's cul-de-sac. By making a combined rectal and abdominal examination I was immediately convinced that I had a large growth in the posterior wall of the uterus to deal with. Upon passing a sound into the uterine canal with a finger in the rectum, I was able to estimate the growth to be about two and a half inches in anterior posterior diameter, and occupying a portion of the enlarged uterine wall about three inches in diameter. It bulged on the peritoneal surface about one and a half inches. It was hard and firm, and on rectal and abdominal examination seemed to be about the size of a man's fist, two-thirds of which was incorporated in the uterine wall, the other third protruding posteriorly.

This woman received galvanism every day that she was not flowing, with few exceptions, for ten weeks. To be more explicit, she received forty-five treatments. The growth rapidly became absorbed. The menstruation at the first period was much improved. At the end of ten weeks the uterus was normal in size, and not a vestige of a thickening in the posterior wall could be discovered. All other symptoms disappeared, including the menorrhagia. It has been four months since treatment was discontinued. I saw the patient a month after she was discharged, and she was well.

The manner of application was as follows: A bulb uterine electrode (figure 5) connected with the negative pole was introduced into the uterine canal. The positive electrode was a large flat sponge electrode (figure 6), which was applied over the sacrum. At a few of the sittings I applied the negative electrode in the rectum opposite the tumor, applying the other on the abdomen. At each séance the current was made as strong as the patient would bear on the external surface. This varied from fourteen to eighteen milliampéres.

Case 9 was also a young married woman, without children, who consulted me for irregular and painful menstruation, painful urination and backache. Age 29; six years married. She was anxious to bear children. This patient was first seen by me at the South Side Dispensary, Chicago. She afterwards consulted me at my office. Patient was well nourished and hearty, and presented no other difficulties than those of the pelvis. Local examination elicited the following condition: The uterus was large and crowded into the hollow of the sacrum. Protruding from the anterior wall and fundus was a large growth of firm, hard consistence, about three inches in diameter and about two and a half inches in thickness measured from the uterine canal. It seemed to be thoroughly incorporated within the uterine walls, forcing the tissues either way, and presenting a convexity both anteriorly and posteriorly. The uterine canal was crowded upon and took a curved course around the tumor. It was with difficulty that the flexible probe could be made to pass it. The tumor protruded above the fundus, or at least lengthened the uterus in that direction.

The treatment in this case was substantially the same as that used in the above case. The bulb electrode was passed into the uterine canal until it pressed firmly upon the protruding tissue, and was held in that position. The external sponge electrode was pressed down firmly over the fundus of the uterus, including the growth in its grasp. The sittings lasted from fifteen to twenty minutes, and were, as a rule, given every day. The tumor reduced rapidly in size, the decrease being very noticeable from week to week. The patient was under treatment eleven weeks, receiving in all fifty-two treatments. The disagreeable symptoms that brought the patient under treatment had disappeared for some time, and it was with difficulty that I could induce her to come to me during the latter part of the time. She left me, at last, before I was quite satisfied with the result, although she was comparatively well.

The uterus was reduced to its natural size, measuring when treatment ceased two and one-half inches, instead of four and a half, as when treatment commenced. While there was a little thickening of the anterior wall noticeable upon careful examination, the tumor proper could practically be said to have disappeared. The menstrual difficulty had ceased. I have not had an opportunity of seeing this patient since last treatment, although she promised to report within a couple of months. As she was so well satisfied with the result of my treatment, I think that she would have reported if there had been any return of symptoms. It has been a little less than four months since treatment was discontinued.

Case 10.—This patient has been under observation for about two years. Electrical treatment was not adopted, however, until about six months ago. The patient is a robust young unmarried lady about 26 years of age. She consulted me because of an abdominal tumor. She had previously consulted a homœopathic physician who had Dr. R. Ludlam, of Chicago, see her. Both of the latter pronounced her incurable. Upon examination I found a large abdominal tumor attached to the whole anterior portion of the uterus, crowding that organ away from the bladder. The tumor pressed uncomfortably upon the latter organ, and filled the space between the uterus and bladder, in which position it could be easily felt through the anterior vaginal wall. The uterus was not enlarged. The tumor was ovoid, smooth, easily movable under the abdominal walls, about nine inches in its long and six in the transverse diameter. It was growing rapidly when she came to me. I advised an operation for removal by abdominal section. This she would not submit to until after other methods were exhausted. I therefore, with the idea of preventing further growth, if possible, by obstructing the circulation, gave her ergotine treatment. In connection with this the iodine

treatment was instituted. By these means I was able to prevent the growth of the tumor.

About six months since, after a lull in the treatment and considerable progress in the growth of the tumor, I commenced at the patient's request the galvanic treatment. The method was similar to that used in the two above cases. A uterine bulb electrode was introduced into the womb, or a vaginal ball electrode (figure 8) was introduced, and pressed firmly against the tumor where it rested against the anterior wall of the vagina, while the large hand electrode was pressed down over the tumor on the abdominal wall. From 10 to 14 milliampéres are borne by the patient at each séance, which lasts from fifteen to twenty minutes. The treatment was repeated every second day for about three months, when the progress in growth was checked not only, but was reduced in size fully one-third. The treatment for unavoidable reasons was dropped for a month, when the tumor made rapid progress again in growth. The galvanism was commenced again and has been continued to the present time, with a still further diminution in the size of the tumor.

This case, I think, would have made much better progress if the treatment had been given every day instead of every second day. In a case in which the tumor is so large, situated as this is, with a texture so firm, I think the galvano-puncture is more suitable, and will give better satisfaction. The patient in this case was very susceptible to the current. She was only able to bear a comparatively weak current on account of a general feeling of depression which it produced. This was not noticed in the other two cases.

Thus, by the foregoing cases can be judged the advisability of using electrolysis in fibroid tumors. The method used in these cases I think originated with myself, though applications of the same principle in other conditions have been used by a number of operators. The method when properly carried out is reliable, prompt, painless, and absolutely free from danger. If for any reason it does not succeed, the failure does not preclude other methods of treatment. I therefore, knowing its results, very enthusiastically recommend it as a procedure well meriting careful consideration.

163 State Street, Chicago.

DISCUSSION.

DR. ELY VAN DE WARKER, of Syracuse, said:—Acting upon the suggestions of Dr. J. N. Freeman, I have used electrolysis in a case of large, rapidly-growing fibroid of the uterus. The patient, a young married woman, had a tumor extending nearly to the umbilicus. No menstrual difficulty. The patient was anæsthetized for the operation. A needle from each pole of the battery was inserted into the tumor. A current of from fifteen to twenty zinc carbon cells from an ordinary galvanic battery was employed. Notwithstanding the anæsthetic, the patient writhed with pain. Following the operation in about three days a high temperature was observed, which was found to be caused by an abscess forming. This abscess in time evacuated itself.

In three months, at a séance of thirty minutes' duration, a much stronger current was used. A subsequent examination exhibited no improvement in the case. In two other cases similar treatment was employed with like results. The treatment in my hands has proved very painful, and not entirely free from danger.

DR. ROBERT NEWMAN, of New York: Congratulating the author on his excellent paper, I feel my inability to discuss it, as I can only coincide and approve the contents in every particular, finding no point to differ. My object in rising is rather to dissect the discussion, illustrating some points and adding to it some of my own experience.

If the last speaker and others have failed in electrolysis, and particularly in the treatment of fibroids, it is due mostly to using too strong a current. Electrolysis may be applied in different degrees of strength, either to absorb, or destroy, tissues. In most cases we use it for absorption, and in such cases weak currents *must* be used. I have always insisted on such currents, and long intervals between séances, and cannot repeat too often as a guide to success, the advice, "weak currents and long intervals." Some operators report the use of from twenty to even seventy and eighty cells. Such heroic efforts appear almost criminal, and it is a wonder that fatal results have not occurred after such treatment; and still more surprising is it that some report successes. The treatment of tumors, and particularly fibroids, is a wide field for investigation, and I have no doubt will result in favorable reports in the future. At present there is a diversity of opinion in the profession on this point. Failures may occur, for good reasons, as, bad management, bungling in the operation, using defective instruments, wrong diagnosis, too strong a current, operating at a wrong time, or too frequently, or by a wrong method, etc. For instance, I consider it wrong to use needles at both poles inside of a fibroid, and have seen bad results by using one needle, which was insufficiently insulated, in the tumor. In the latter case the current burned along the whole track of the needle, and caused thereby a peritonitis.

If needles are used it is best to introduce the needle as the negative pole into the tumor, so well insulated that only the point acts upon in the tumor, while the peritoneum, and other tissues outside the tumor, are not affected by the electricity. The positive sponge electrode is held near the tumor on the cutaneous surface. There are many other methods used and reported by different authors.

It is admitted that premature and reckless statements, as also failures in such cases, have shaken the belief of many, and created a skepticism in the profession. But that is overbalanced by the accumulation of positive evidence of successful reports and cures by trustworthy men, who can furnish witnesses and produce the patients so cured; for instance, Freeman, Everett, Apostoli, Meniére, and many others. We have also on record brilliant cures of ovarian tumors by Ehrenstein, Clemens, VanDer-

veer, and particularly by Lemeleder, of Mexico. The latter confirms his successes in a letter which I received from him recently, and adds new cases to the list. The indurations left after pelvic cellulitis I have often removed entirely by repeated applications of electrolyses: which would not have yielded to any other treatment. In these cases I also used weak currents repeated once a week.

In carcinoma I have had successes and failures. In such cases I use the electrolysis as a destructor of abnormal tissues, and therefore must apply strong currents. A negative needle is inserted at or near the periphery of the tumor, while a positive sponge electrode is applied opposite on the cutaneous surface. Séances are repeated in short intervals until the tumor is destroyed. The success depends on whether the circle operated on has included the whole region of the carcinoma. If cancer-cells have extended outside of that circle, and are left to proliferate, the case will end fatally.

And now, Mr. President, I add to the list the greatest achievement of electrolysis, the certain saving of every woman afflicted by *extra uterine pregnancy*, while all perished in former times. Successful cases have been reported by A. D. Rockwell, E. G. Landis, Nathan Bozeman, Garrigues, Reeve, Lusk, and others. The *modus operandi* is simple. Repeated applications, one metal pole in vagina or rectum, near and below the tumor, the positive sponge-electrode above the abdomen, will destroy and absorb the fœtus. It is of great importance to the obstetrician, nay, to every practitioner, to know that he has a certain remedy to save life in this troublesome anomaly of nature.

I have also used electrolysis successfully in vaginismus, strictures of the rectum and urethra. The latter diseases are rare in females, but they occur.

In conclusion, I wish to say that it is desirable to express the amount of electricity used in definite terms; that is, to measure it. If I have reported cases in which I said I use six cells, etc., it has been done for the purpose of being better understood by the non-expert, and partly because we have no instruments which express exactly the measure, as our present galvanometers are not exact, too expensive, and in many cases in reality are only galvanoscopes. Time will come, and I hope very soon, when we will have good, reliable instruments, obtainable at a reasonable price, which will measure the electricity exactly.

Dr. Geo. F. Hulbert, of St. Louis, said: I am a great advocate of electricity. I have even been called an electrical crank. I am surprised that Dr. Van de Warker should use electricity without a means of measuring it. As well use strychnine or quinine without measuring the dose, as to use electricity without measuring it with the galvanometer.

I have recently used electrolysis in a case of chronic pelvic abscess, with complete success. With Dr. Engelmann I have seen electrolysis employed for fibroids of the uterus with gratifying results. Much is to be hoped for from this treatment in gynecological practice.

Dr. George J. Engelmann, of St. Louis, said: Gratified as I have been by the progressive spirit evinced by the labors of Dr. Martin, pleased as I have been to hear of the results he has achieved, yet I have been greatly surprised. I am surprised to hear my friend Dr. Van de Warker, one of our most progressive gynecologists, tell of his patient, though under the influence of an anæsthetic, *writhing in agony* from pain caused by the galvanic current in efforts at electrolysis! I am surprised to hear the gentlemen, especially Dr. Newman, so well known in the field of electro-therapeutics, gauging the force of the galvanic current by the *number of cells* used; and I am surprised also to hear the sensation of the patient spoken of as the limit or measure for the strength of the current. This is the teaching of the past, using the electrode externally, *upon* the tissue to be affected, limiting the strength of the current by the sense of pain experienced by the patient, and expressing the force used in the number of elements needed to destroy it; this current is necessarily a weak one, and to accomplish anything long sittings are needed.

The success of the electric treatment, galvanic or faradic, of to-day—perhaps I should say of the future—is based upon the precise dosing of the remedy, the use of powerful currents, for a short time, but applied *in loco* to and into the tissues. I have followed the footsteps of that able Frenchman, Apostoli, to whom we owe this new departure in electro-therapeutics, and it is my opinion, based upon his success and my own results, that the electric forces, when correctly gauged and directly applied, will prove an invaluable aid in gynecological treatment.

Dr. Martin tells us of a uterine fibroid, of the size of an apple, reduced after six or eight weeks treatment, sittings of twenty to thirty minutes each, repeated every other day.[50] I have destroyed uterine tumors, somewhat smaller, indeed, the largest the size of an egg, in *three* sittings of *five minutes* each, causing the patient no pain. I have reduced to less than one-third of their original size, uterine fibroids filling the pelvis and extending above the navel, in from ten to twelve sittings of five minutes each, treating the patient in my office or clinic, using no anæsthetic, and causing no excessive pain. Remember, that for the destruction of these large tumors I used the galvanic current not longer than fifty minutes or one hour, as long as Dr. Martin does in two or three sittings, but I know precisely the remedy administered. To attain a certain purpose, a certain dose is necessary; for the reduction of a fibroid, we needs must have more than for the treatment of a simple hyperplasia. As a certain dose of morphia, varying slightly with the individual, is necessary to ease pain, and another to produce complete loss of sensation and sleep, so it is with the galvanic current.

The strength of the current must be gauged *by the object to be accomplished*, and *not by the feelings of the patient*, as has been the custom, and by the kind of electrode used we prevent unnecessary pain. The galvanic current must be dosed as we dose other remedies, and in proper dose it must be applied directly to the proper place; definite results may then

[50] The longest sitting I have advised is twenty minutes.—Martin.

be expected. The vague manner in which electricity has been used I have always compared to the rubbing in of quinine for the cure of malaria; unless we give certain doses, at certain times, no decided result is accomplished; in time it may do some good. So it is with the galvanic current; by the long-continued use of the mild currents, sittings of twenty or thirty minutes, every few days, some good will result; but until the galvanometer becomes a part of the galvanic battery, and until currents of known strength are applied directly to and into the diseased tissues, progress in the field of electro-therapeutics is impossible.

A SUPPLEMENTARY PAPER TO DR. MARTIN'S, CITING TWO CASES OF FIBROID TUMOR SUCCESSFULLY TREATED BY ELECTROLYSIS.

BY J. N. FREEMAN, M.D.,
OF BROOKLYN, N. Y.

The electrolytic treatment of uterine fibroids has now been so long before the profession, so thoroughly tested, and so entirely successful, that it is entitled to a place among the recognized means of dealing with these troublesome growths. Fatty tumors have not, in my hands, yielded to its influence, nor have I succeeded in curing cystic tumors; but fibrous growths will uniformly melt away and be absorbed under a proper application of the constant current. The most suitable cases are those intramural or subperitoneal fibroids where ergot is useless, and where, without this resource, we could only hope to cure our patients by removing the uterine appendages or the uterus itself. To illustrate my methods of treatment, I will give two cases in detail, the first of which was read before the Medical Society of the County of Kings, at its regular meeting in June, 1878. The other case has not been reported:

Case 1.—Miss O., aged 35, came under my care in St. John's Hospital in May, 1876. Anæmic, and suffering from extreme nervous debility. Menstruation profuse and painful. Examination revealed a fibroma of the right anterior wall of the uterus, more nearly approaching the peritoneal than the mucous surface. Ergot had been used persistently and in large doses, without benefit. A consultation having decided that no surgical interference was admissible, I determined to attempt the destruction of the tumor by electrolysis.

The first operation was on December 23, 1876, and was done in the presence of Dr. Jos. C. Hutchison, Dr. Wm. Gilfillan, Dr. J. H. H. Burge, Dr. J. R. Bird, Dr. Frank W. Rockwell, Dr. G. G. Hopkins, Dr. A. W. Catlin, Dr. E. S. Bunker, and Dr. Charles Corey. The uterine cavity was found to be five and one-half inches in depth. The tumor was plainly mapped out through the abdominal walls, and apparently of the size of the head of an ordinary child at birth. After she had been placed under the influence of ether, I took a large sail-needle, curved at the pointed end, and insulated to within an inch of the point, and, passing it through the cervical canal, thrust it into the tumor and connected it with the positive pole of a galvanic battery. A straight round needle, similarly insulated, was then thrust through the abdominal wall and into the tumor, taking care to avoid the bladder, and so placed as to come within an inch of the other needle, and then connected with the negative pole of the battery. The tumor was so dense and firm as to require very heavy forceps and much force to drive the needle into it. A current from sixteen cells was continued through the needles for fifteen minutes. No unpleasant effects were experienced, and the patient was out of bed the next day.

I repeated the operation in the same manner on January 2, 1877, continuing the current for twenty minutes, and again on January 9, this time increasing the number of cells used to twenty-four, and the time to twenty-two minutes. The next week her menstruation was less profuse and less painful than usual. I repeated the operation February 6 and 12, increasing the time to half an hour and using thirty-two cells.

March 6, before the sixth operation, the uterus measured four inches and a half in depth. The tumor, or what remained of it, was soft to the touch, and the needle could be easily passed in any direction through it with the fingers. Her general health was much improved. The seventh operation was Mar. 12.

April 3 the sound passed into the uterus only to the depth of three inches and a half. This, the eighth and last operation, was unfortunate, as the needle that was passed through the abdominal wall was stripped of its insulating covering and the track of the needle so much irritated as to cause an abscess that was slow in healing.

I left her in the hospital in June for a long trip in the East, and did not return for eight months, during which time she had no medical treatment. On my return I made a careful examination, and found no trace of the tumor. The sound would pass but two inches and a half into the uterine cavity, and the uterus was freely movable in the pelvis. I have examined the lady at least once a year since that time, and saw her only last week in excellent health and with no symptoms of ever having had any trouble in the pelvic cavity. Her menstrual periods are regular as to time and quantity, and are painless.

My *fifth* case was referred to me on Feb. 12, 1885, by my friend Dr. Alexander S. Clark.

Case 5.—Mrs. H., aged 31; married six years; no children. Menses always scanty and painful. A fibroid tumor, the size of a large cocoanut, occupied the anterior uterine wall. The cavity of the uterus measured five inches and a quarter in depth. The tumor was attached by its entire anterior surface to the bladder, preventing contraction of that organ to expel the urine, and thus causing a severe chronic cystitis. This lady was very much debilitated, and not able to leave her bed without assistance.

In this case I operated three times, February 16, April 29, and June 4, 1885, using for the positive pole a platinum probe, not insulated, passed to the fundus of the uterus; and for the negative pole, the straight, insulated steel needle, passed through the anterior wall of the abdomen, and into the tumor. I used thirty cells for about half an hour on each occa-

sion. The tumor was quite soft and two-thirds gone at the time of the third operation, and her health had steadily improved.

In September she walked from her house to my office and back, the distance of a mile each way, and has been in fair health since. The action of the uninsulated probe in these operations produced enough irritation to partially occlude the cervical canal, which needed some after attention. The uterus is now freely movable in the pelvis, is of the normal size, and has no remnants of the tumor. The bladder has entirely regained its healthy tone.

I have now treated eight cases, and have seen cases treated by other surgeons with my needles, and from this experience have come to the following conclusions:

When the tumor is sub-mucous or intra-mural, the positive pole should be attached to a curved platinum needle, insulated to an inch from the point, and which has been passed through the cervical canal and thrust into the tumor. This course may be followed in sub-peritoneal tumors if the base is broad enough to be sure of inserting the needle into the tumor, and not one side or beyond it.

In other cases, or where the tumor is sub-peritoneal, with a narrow pedicle, the positive pole should be connected with a large platinum probe, insulated to an inch from the end, to be inserted to the fundus of the uterus or to the vicinity of the base of the tumor. In all cases the negative pole of the battery should be connected with a straight, round, smooth steel needle, strong enough and properly tempered not to break, and insulated to one-half or three-quarters of an inch from the point, and this thrust into the tumor from the most available point, whether through the vaginal walls or through the abdominal parietes, taking care not to wound the intestines nor the bladder.

Sixteen to thirty of the ordinary zinc-carbon cells is as strong a current as I would advise, and from fifteen to forty minutes the limit of time. An anæsthetic is always required. It is better to give plenty of time between the operations than to be in too great a hurry. Once, or at most twice, between the menstrual periods is often enough, and if there is much reaction, that may be too often.

I have had no experience in treating those immense fibroids measuring twelve inches or more in diameter, that we occasionally see, but am confident that they can be cured, in the large proportion of cases, if taken in the earlier stages, at the time when they usually come under the notice of the physician.

80 Hanson Place, Brooklyn, N. Y., June 26, 1886.

POTASSIUM CHLORIDE.[1]

BY ASA F. PATTEE, M.D.,

OF BOSTON, MASS.

Nothnagle and Rossbach, in their "Treatise on Materia Medica," say that "therapeutically potassium chloride is not used." We find no mention of its use in the United States Dispensatory, National, or the various works on materia medica. Sander has recommended its use in epilepsy in place of the potassium bromide. Opinions vary as to its usefulness in that disease. It has its place, however.

Potassium chloride closely resembles common salt in appearance; it crystallizes in anhydrous centres; permanent in air, soluble in three parts of cold water; has a simple saline taste not as pronounced as common salt.

Formerly it was generally considered that the corresponding salts of potassium and sodium had the same physiological and therapeutical action upon the animal body; and it was a matter of indifference which salt was used. It is now known, however, that this is by no means so, and that important and well-defined distinctions do exist in the two salts.

In the body the potassium chloride is found in the tissues, cells and blood-corpuscles, while in the fluids (the serum of the blood, lymph and bile), we find almost exclusively sodium chloride. Arterial blood mixed with a dilute solution of potassium chloride becomes brighter than that mixed with a solution of sodium chloride. Potassium chloride given in 20-grain doses with 15-grain doses of sodium chloride three times a day after meals, causes an increase in the molecular tissue and red blood corpuscles, a fact that I myself have proved.

The effect of potassium, citras and acetas when introduced into the system, is to cause the excretion of a large amount of sodium chloride in proportion to the amount given. The potassium chloride does not interfere with the normal amount of sodium chloride in the fluids or solids of the body.

That potassium chloride is essential for the development of the animal tissues is shown by the fact that food which in itself is not sufficiently nutritious, such as over-boiled meat, recovers its properties on the addition of potassium chloride and a small portion of sodium chloride (Binz). Experiments with plants show also how necessary potassium is for cell nutrition.

For many years I have used potassium chloride, and find it a valuable medicine either alone or in combination with other medicines. I have used it in many cases of anæmia after other well-known treatment had failed to do good, with the most happy results. The dose usually given was 5 grains every three hours in a wineglass of water. In the commencing stage of cirrhosis of the liver due to alcoholic excess it has apparently been of benefit.

Exudations after inflammation with effusion of lymph, particularly pelvic cellulitis, have quickly disappeared under its use. In glandular enlargements, in my hands it has been of more benefit than calcium chloride or the iodine compounds. In stomatis of pregnant women or from mercury it is equal to the chlorate. In ovarian neuralgia with nervousness and menstrual headache accompanied with wakefulness, this salt has given better results than the bromide or ammonium chloride. When combined with corrosive sublimate it is one of the best preparations for syphilis. I usually give it as follows:

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

℞. Potassii chloridi..... ℥ij.
Hydrargyri chlo. corros..... gr. i.
Aquæ..... ℥iv.
M. S. 10 to 20 drops every two hours in wineglass of water.

This preparation I have used almost exclusively in the treatment of syphilis in both its acute and chronic stages, and the result has been most satisfactory. The tincture ferri chloridi is much improved in its therapeutic action when given with potassium chloride.

It is my desire that those of our profession who have not used the potassium chloride may investigate its therapeutic action, of which I can assure them it will verify my statement. The dose will range from 20 grains to 2 drachms in the twenty-four hours, well diluted with water.

EMBOLISM.[1]

BY J. W. THOMPSON, M.D.,
OF ST. PAUL, MINN.

The detachment of fibrinous deposits from the interior of the heart is an occurrence so thoroughly recognized and understood by the profession, that it seems almost superfluous for me to invite your attention to this subject. The cases to which I desire especially to direct your attention, contain nothing that has not been carefully canvassed by more competent observers than myself. Yet aside from the interest they may possess for the ophthalmologist, they are sufficiently rare from a broader standpoint to possess also much interest for the general practitioner. It could scarcely be considered a presumption in me to believe that you will readily pardon me for being found occasionally outside of the strict limits of my specialty, discussing matters that are of vital interest to both you and me. The links that connect diseases of the eye with systemic diseases are numerous. To understand and to treat diseases of the eye intelligently and successfully, require a theoretical and practical knowledge of the treatment of systemic diseases.

Embolism is only a symptom and it is not infrequently seen by the ophthalmologist in the early stages, from the very fact that small arteries, such as the retinal, are often obstructed first. The very circumstance of the existence of an embolism, whether it be of the retinal artery or of any other, presupposes at least a disease of the heart or large arteries. One of the cases to which I shall directly invite your attention proved to be only a symptom of an existing endocarditis. In this disease paresis of the heart constitutes the actual danger while valvular lesions form the ultimate danger. In the beginning of endocarditis, before there has been any detachment of vegetations to obstruct even small arteries, the functional disturbances and subjective symptoms have no well marked characteristic features. The most of them appear either isolated or combined in other diseases of the heart and its envelopes, or even in the affections of distant organs. It is then upon the physical signs alone that a diagnosis can be founded, since the antecedent symptoms can only furnish presumptive evidence as to the nature and seat of the lesion. The symptoms of endocarditis and pericarditis so closely resemble one another that they may be confounded and can only be accurately distinguished by means of auscultation. The auscultatory signs by which a differential diagnosis can be determined are as follows: "In endocarditis the murmur is synchronous with the first sound of the heart, and does not occur with the diastole unless regurgitation takes place through the aortic or pulmonary semi-lunar valves, and the murmur is heard loudest at the apex of the heart." "In pericarditis the murmur is not exactly synchronous with the valvular sounds, and often occurs during both the systole and diastole of the heart, and the murmur is heard loudest at the border of the sternum near the fifth left costal cartilage."

This affection of the heart is frequently caused by rheumatism, chorea, pyæmia, or the acute exanthematous fevers (Ingals). In endocarditis numerous vegetations accumulate on the surface of the aortic or mitral valves. These vegetations become detached and float about in the circulation, occasionally plugging up small arteries, and when large enough larger arteries become obstructed by them. The secondary affections that may result from this infarction of different arteries by these detached vegetations are loss of vision from obstruction of retinal artery, gangrene of a leg or an arm by cutting off the circulation, swelling and inflammation of the spleen, acute atrophy of the liver, pneumonitis, cerebral disease, etc.

Case 1. A man, Mr. L. C., aged about 30, of very stout build, a carriage ironer by occupation, and with an excellent family history on both sides, consulted me on account of a very sudden blindness of his left eye. Up to this time he had enjoyed very good health with the exception of a slight attack of rheumatism which had occurred a few weeks before I saw him. From this, however, he seemed to have fully recovered. On ophthalmoscopic examination I observed the very characteristic appearances of an embolism of the retinal artery. The optic disc was quite pale and transparent, and the arterial vessels thin, and here and there changed into white bands with an occasional red plug of coagulum. The media was quite clear. In the course of a week or ten days there was a well marked improvement, absorption having taken place and the circulation in the retina began to be reëstablished with a return of a considerable amount of sharpness of vision. In the course of a week or ten days vision in this eye had so far advanced that he could see to go about very comfortably. The other now became affected in a like manner and pursued a similar course. When this one began to improve, the one first attacked had very nearly recovered full sharpness of vision. Examination by auscultation revealed, but not clearly, what seem to me to be an endocarditis. I consulted a brother practitioner for whose opinion I entertained much respect, and he confirmed my diagnosis.

In a few weeks the physical signs of endocarditis became better marked, when he was suddenly seized with a severe pain in his right arm which extended

[1] Read before the Minnesota State Medical Society, in Minneapolis, June 17, 1886.

from a short distance above the elbow to the wrist and hand. I was called to see him in bed very much prostrated with the pain. The arm was much cooler than its fellow and almost or quite pulseless. There was a knotty tumor in the brachial artery near its bifurcation. The circulation in the radial and ulnar arteries was entirely cut off. For the relief of the pain I employed a hypodermic injection of morphia, applied warm, stimulating embrocations and encased the arm in cotton-wool. I prescribed large doses of bicarbonate of potash with a view of rendering the small pieces of coagula that might yet be floating about in the circulation more soluble. The next day, notwithstanding the arm had been maintained in the horizontal position and kept under the bed-clothes with the application at intervals of every hour or two of warm stimulating embrocations, was quite pale, cool, shrunken and pulseless. In short, the vitality of the limb was with difficulty preserved through the timely efforts of the anastomosing branches. The recovery was slow but upon the whole satisfactory. The pulse by degrees returned, but up to the time I saw him last, which was two years from the date of the attack, was perceptibly feebler than in the left arm. This arm he informed me, always became cold much easier than the left, and in consequence of this he was obliged to keep it clothed warmer than its fellow. The strength had very materially increased so that he could support nearly as heavy weight with it as with the other, but for a much shorter time.

Case 2. Mrs. E. H., a married lady, 27 years of age, became a patient of mine in October, 1865. She had been under the care of a neighboring physician for some weeks. Since he expected to be absent from home for a protracted period, he requested me to take charge of her case. He informed me that about four weeks since she had aborted at or near the fourth month of gestation. The placenta had never, to his or the patient's knowledge, come away *en masse*. As a result of this she was then suffering from septicæmia, which confined her in bed for a period of five or six weeks from the first date of my attendance. Several large abscesses formed in the region of the hips. During this time she became very suddenly blind in her right eye. The sight of this eye was never recovered. A subsequent ophthalmoscopic examination demonstrated that this had been the result of an embolism of the retinal artery.

In about four weeks from the date of the loss of the eye, she had sufficiently recovered health and strength to enable her to be out of bed and about the house a good share of the day. At her urgent request her nurse gave her a warm sponge bath. The next day I was called to see her and found her pulse somewhat over 100, her tongue tremulous and slightly furred, her bowels constipated, and her skin hot and dry. The sounds of the heart were normal. In the lower part of the right leg there was but little feeling. The foot was cold, shrunken and livid. At the lower end of the middle third of the femur there was a hard knot or tumor which was sensitive and painful. There was no circulation in the limb below the tumor. The pulsation of the femoral artery above the tumor was very feeble and easly compressed. This state of affairs continued for five or six days when the limb below the knee became gangrenous. The line of demarcation formed close to the knee joint. She was at this time considerably reduced in strength, and I entertained very serious doubts as to her recovery or even her ability to survive an amputation of the limb. By the request of the patient's relatives the late lamented Dr. W. H. Mussey, of Cincinnati, was called in consultation. Notwithstanding the very much reduced condition of the patient's strength, he advised the immediate amputation of the limb well above the line of demarcation, He also entertained very serious doubts as to her surviving the operation, but of course, it was the only procedure that offered the slightest prospect of relief. Accordingly the limb was amputated. Before tying the arteries plugs of coagula one or two inches in length were drawn out of each artery. The stump did badly for two weeks, discharging large quantities of pus. The flaps sloughed some but finally united. The sloughing and suppurating gave rather an unsightly appearance to the stump, but it finally became sound and proved to be a very useful one. The patient became hearty and robust, and continued to increase the number of her family for several years thereafter.

The cause of the embolism in this case seemed to be due directly to the septicæmia, since there never appeared any heart complication. Dr. Mussey reported the case in a clinical lecture to his class in the Miami Medical College. I preserved his remarks for a long time, and thought when I commenced preparing this paper that I should be able to avail myself of his valuable observations, but the document had become misplaced, and I am obliged to forego both the pleasure and the profit thereof. Perhaps some of the older members present may have seen his report and remember more of the details than I have recited. I have often debated the subject in my mind whether the warm sponge bath had any direct agency in producing the embolism, or whether they were only contemporaneous events.

309 Wabasha, cor. 3d, St. Paul, Minn.

MEDICAL PROGRESS.

A New Explanation of the Process of Menstruation.—Lœwenthal (*Archiv. für Gyn.*, B. xxiv, Hft. ii, 1884), in an exhaustive article, gives a new theory of menstruation which shows marked originality and research. It would be impossible, in the short limits of this report, to give an abstract of the elaborate train of reasoning by which he arrives at the results. They are summed up briefly at the end, and we would refer those interested in the subject to the article itself for the minute details. He makes the following propositions:

1. The periodical flow of blood from the female genitals is not a consequence of the rupture of a follicle (which usually occurs at the same time), but of the degeneration of the uterine mucous membrane, which has become hypertrophied before such rupture, and independently of it.

2. This growth, the menstrual decidua, is caused by the imbedding in the unimpregnate condition of the last ovum furnished by the ovaries.

3. If this imbedded ovum is impregnated, the menstrual decidua becomes that of pregnancy, but if the ovum remains unimpregnated, it degenerates as a consequence of the death of said ovum.

4. Taking each menstruation for itself, the rupture of the follicle and the flow of blood stand in another causal relation to each other in that possibly the causes and conditions which are operative at the occurrence of the hæmorrhage may, at the same time, have an effect in bringing about the rupture of a ripened follicle.

5. The concidence of the rupture of a follicle and the flow of blood is, therefore, no necessary one. Each can occur separately; a follicle can rupture without there being any menstrual decidua present, and this secondary consequence of the ovum, which has previously made its appearance—namely the menstrual flow, can occur without a new follicle rupturing at the same time.

6. The periodicity of menstruation is determined by the extra-follicular life of the unimpregnate and imbedded ovum; the variations from the general or individual periodicity depend upon the shortening or absence of such capacity for life, either idiopathic or the result of intercurrent influences.

7. The ovum which has been expelled, usually at the last menstruation, and is present ordinarily in the uterus (in abnormal cases elsewhere), is the one which is impregnated. From these the following practical conclusions can be drawn:

8. Since the menstrual flow is neither a physiological function, nor the necessary accompaniment of such a function, but the direct consequence strengthened by innumerable repetitions of a process which is the result from social conditions—namely, the unimpregnation and death of the human ovum, therefore it has all the properties and results of other hæmorrhages which are always pathological.

9. It increases and diminishes under like conditions with them.

10. The flow of blood which is the necessary accompaniment after menstrual decidua, is only to be regarded as harmless when it occurs *per diapedesin*. When *per rhexin*, it is under all circumstances unnecessary, and becomes injurious when it is felt and responded to by the entire organism as a loss.

11. The amount of the injury corresponds to the proportion between the amount of blood lost, and the quantity (plus the quality) of blood which the body contains at the time.

12. Under these circumstances the indication is for the greatest possible reduction in the amount of the menstrual flow, as of any other loss of blood.

13. The means to be recommended are first and foremost rest in bed, and hot water injections.

14. On the contrary, the voluntary cessation of the menses (idiopathic amenorrhœa), is under no circumstances to be regarded and treated as a disease, it is only a sign that a function (ovulation) which is not necessary to the life of the individual, from some cause or other (youth, age, pregnancy, lactation, debility), was not properly performed at the proper time, that is about four weeks previously.

15. Supported by this theory, and the observation of Lawson Tait as to the importance of these tubes for menstruation, it would be desirable to substitute for castration, salpingotomy (partial resection of both tubes after previous ligation) in those cases where uterine dysmenorrhœa, menorrhagia, fibroids, and such uterine affections call for the anticipation of the menopause.

16. Should it appear impossible after beginning the operation for castration in the above mentioned conditions, to completely remove the ovaries, salpingotomy would be directly indicated.—*Glasgow Medical Journal*, May, 1886.

THE BLOOD IN LEUKÆMIA, TOGETHER WITH OBSERVATIONS RELATING TO THE ORIGIN OF THE FIBRIN FERMENT.[1]—According to the ideas of Alex. Schmidt, fibrin is formed in the coagulation of blood and serous fluids by the action of three substances. One of these exists formed in the fluid; it is regarded as the groundwork proper, and has been called fibrinogen. The other two, called respectively the fibrinoplastic substance and fibrin ferment, are presumably derived from the white corpuscles, that are destroyed and are formed at the time of coagulation. In this destruction of the leucocytes there is supposed to be an interaction of the blood plasma and the protoplasm, in which the former takes from the last the constituents necessary to form the fibrin element.

In some cases of failure of the blood to clot, it has been regarded as due to an insufficient breaking up of the cells above mentioned. In other words, there is blood in which all the stuff necessary for the formation of the ferment is present; but in which this never is made, because the blood plasma has been so altered as to be deprived of its destructive agency.

One author thinks this to be the case in blood in leukæmia. From the standpoint of Dr. Schmidt this would not be expected, as from the large amount of white cells the action should be very energetic.

In order to prove which view was correct, blood was drawn from a leukæmia patient, in which were 2,000,000 red and 630,000 white corpuscles to a cubic millimetre. The venous blood did not coagulate particularly slowly, but the fibrin was poorly developed, soft, and did not contract firmly. On a further addition of leucocytes the time of clotting was prolonged. On the other hand, that of filtered plasma from the horse was greatly accelerated by the addition of one-seventh of its volume of leucæmic blood.

In the blood from the cadaver of this patient only traces of the free ferment could be detected with the proper reagents. If instead of the entire blood only the white corpuscles, which were deposited on standing, were alone added to the horse's plasma, the time of its coagulation was much retarded. From these experiments the author concludes that in reality the groundwork for the development of fibrin ferment was present in the leucæmic blood, but that its plas-

[1] J. v. S. Himmelstjerna. Fortschritte der Medicine, 1885, p. 669.

ma could not form the true ferment out of this as in the normal plasma of the horse.

In the leucæmic blood the formative materials of the ferment are kept attached by the white corpuscles. But from the investigations of the author they were found in solution in fluids that are capable of coagulation. Examination of the filtered plasma before and after this showed that the amount of ferment was greatly increased during the process. Since the formed elements were wanting here, the fibrin must be formed entirely from substances in solution. The action of a fluid obtained from a hæmorrhagic cyst in the neck also favored this view. It contained but few cells and did not coagulate spontaneously. Nevertheless, filtered normal plasma separated considerable quantity of the ferment from this. The filtered fluid also acted on the horse's plasma not only in shortening the time of coagulation, but also by increasing the amount of fibrin formed.

The author finally turned his attention to a consideration of the nature of the substance which formed this substratum of the ferment, and he concludes that it comes from the retrograde metamorphosis of the albuminous bodies. He tried, therefore, if the addition of any of these bodies would accelerate the process. The results obtained in this way were variable, but on the whole were in accordance with the theory. The experiments were more successful, however, when conducted in the following way: A solution of one per cent. of glycocholate or taurocholate of soda was added to the filtered plasma, which entirely deprived it of its spontaneous coagulability. If to this one of the above mentioned products be added, fibrin is formed in a few hours. Whether these are themselves the sources of it, or whether they simply increase the activity of that already in solution (by decreasing any resistance) is left undecided by the author.—*Boston Medical and Surgical Journal*, May 27, 1886.

The Salicylic Treatment of Glycosuria.—From his recent researches, Prof. Latham concludes that there are two distinct kinds of diabetes. First, there is that which arises from a neurotic disturbance of the function of the liver; this has the effect of arresting the metabolism of the glucose, and allowing it to pass unchanged into the general circulation and appear in the liver. Second, that which arises from a neurotic disturbance of the function of muscle; this allows glucose to form in that tissue, and to pass unchanged into the general circulation and appear in the urine. He has also shown that this second kind of diabetes is intimately connected with rheumatism; so intimately, that a degree of more or less oxidation determines whether the muscular tissue generates an abnormal amount of lactic acid or of glucose in the system. Moreover, he has shown that when salicylic acid is administered, it has the property of arresting the formation of both lactic acid and glucose, by means of a chemical combination which it forms with the antecedents of these products.

These views are to some extent confirmed by an article published in the *Therapeutic Gazette* of last year, page 446, by Dr. Thomas J. Yarrow, in which are outlined four cases of the complete disappearance of sugar in the urine under the continuous administration of salicylate of sodium. In the *British Medical Journal*, May 1, 1886, Dr. Holden in a very valuable article calls attention to the rheumatic glycosuria, and reports six cases of rheumatic glycosuric patients in all of which the administration of salicylic acid produced a great reduction in the quantity of urine and entirely removed the sugar. In several of these cases there was no restriction in diet ordered. Dr. Holden has also used salicylic acid in four other cases in which no rheumatic symptoms existed, and in all failed to make any impression on the polyuria or sugar. The first and most marked effect of the salicylic treatment, according to Dr. Holden, in the glycosuria of rheumatic persons, is the almost complete removal of the distressing polyuria which accompanies it.

As to diet, the careful restriction which is so imperative in the diabetes of hepatic origin is not so necessary in this kind; still, Dr. Holden thinks it greatly helps to restrict the formation of glucose in the system, by prohibiting potatoes, farinaceous puddings, and sugar as much as possible.

In administering salicylic acid, the following mixture has given good results: ℞. Salicylic acid, ʒii; bicarbonate of sodium, ʒi; carbonate of ammonium, ʒi; mix in water, ℥i; and, when effervescence has subsided, add water to ℥xii. One-eighth or one-twelfth part to be taken three times a day. This is a soluble neutral mixture, and is not unpalatable when given in a wineglass of water, with a little tincture of orange peel added. The ammonia prevents any depressing effects. Dr. Holden has tried the free acid made into 3-grain pills with mucilage, as recommended by Dr. Latham in rheumatic fever, but has not found them superior to the mixture, while patients object to swallowing five or six pills as a dose.

It is a matter of much importance, with regard to treatment, to be able to distinguish between the two kinds of diabetes. The presence or absence of rheumatic arthritis, pains, and cramps, is often sufficient; but Dr. Latham has recently called attention to a more certain mode of distinguishing between the two, as he has found that in the diabetes of rheumatic persons—that is, originating in the muscular tissue—the urine contains some substance which dissolves cuprous oxide; so that a larger quantity of Fehling's test has to be added before getting the brown precipitate in this urine than in the diabetic urine of hepatic origin.—*Therapeutic Gazette*, June 15, 1886.

Terebene as a Generator of Ozone.—In a recent note on this subject, Dr. A. M. McAldowie says: The treatment of lung diseases by inhalation is beginning to be adopted by the profession at large. It has been for years my favorite method of treatment, in a district where, unhappily, pulmonary complaints are unusually abundant. In the *British Medical Journal* for 1881 (vol. ii, p. 666), I stated that, after four years trial, I had adopted terebene in preference to other antiseptics, and had administered it

both internally and by inhalation in over two hundred cases of phthisis, bronchiectasis, chronic bronchitis, and other pulmonary complaints characterized by profuse purulent expectoration. Further experience has strengthened this opinion. In connection with this subject, I wish to call attention to a point which appears to have been overlooked by recent writers on the subject, namely, the formation of ozone which attends the slow oxidation of the various members of the turpentine group. When I went to reside at the North Staffordshire Infirmary, ten years ago, I was struck with the remarkable success which attended the treatment of chronic lung diseases; a fact which I at first attributed solely to the elevated site of the hospital. But I afterwards noticed that there was a high percentage of ozone in the atmosphere, especially when the wind was from the west, where there are extensive tracts of pine woods. It is well known that the air in pine woods contains a large amount of ozone. Mr. W. Goss, a pottery manufacturer in Stoke, informed me that he had noticed that the men and girls employed as enamel painters were exceptionally healthy compared with the other pottery workers, although the hygienic conditions were mostly unfavorable; the painting having to be done in hot close rooms. He attributed this entirely to the turpentine, which is used as a medium for mixing the colors. Spirit of turpentine is exposed in the room, in flat leaden vessels, where it speedily oxidizes. Part of the oxygen liberated attacks the vessel, which becomes coated with oxide of lead; the rest escapes into the atmosphere in the form of ozone. Pursuing this subject still further, I have made inquiries at several small shops where paraffin is sold, and have found that the inmates are unusually healthy and fresh-looking, considering the bad hygienic construction of their dwellings. I have likewise found two cases where the vendors had previously suffered from chronic chest disease (consumption, they told me), and had taken to selling paraffin, in addition to their other articles, and the result had been permanent relief of their ailments. Bearing these facts in mind, I have, for some time past, treated chronic lung cases by exposing terebene and turpentine in the room, in flat shallow dishes. The results have been, as yet, satisfactory, but further trial is necessary before a definite conclusion can be drawn. I shall be obliged if any member of the Association can inform me whether any statistics have been made as to the health and immunity from lung diseases of residents of pine woods, venders of, and workers in, paraffin and other volatile hydrocarbons; and also whether any experiments have been made by exposing any of the above substances in wards for consumption, or other sick chambers. If a curative action can be proved, it would be useful in indicating a site for a sanitarium for chest diseases.—*British Medical Journal*, May 29, 1886.

FREQUENCY OF DISEASE OF THE UTERINE APPENDAGES.—At the close of a paper on this subject DR. H. C. COX, of New York, draws the following conclusions:

1. Ovarian disease is *not* as common as it has been represented; the surgeons, and *not* the pathologists, being responsible for the prevalence of the contrary opinion.

2. Because an ovary is partially diseased, it does not follow either that its functions have been materially impaired, or that its removal is imperative.

3. The expressions "cirrhosis" and "cystic degeneration" commonly applied to the ovary are mischievous terms, which are too often used in justification of *unjustifiable* operations.

4. Actual disease of the tubes is far less frequent than is generally believed. Lesser degrees of inflammation, especially slight "catarrhal salpingitis," are seldom appreciable to the pathologist, still less to the surgeon.

5. Many of the symptoms ascribed to disease of the uterine appendages are really due to *localized peritonitis*, and will *not* be removed by a removal of the appendages.

6. The physiology of the ovaries and tubes is still imperfectly understood; their pathology must then remain *sub judice*, and operations for their removal, on the ground of limited disease alone, must be regarded as largely empirical. To which I would venture to add the prediction:

7. The present enthusiasm in this country in favor of Tait's operation will not endure, because it will eventually be discovered that the number of *permanent* cures is entirely out of proportion to the number of operations.—*Am. Jour. of Obstetrics*, June, 1886.

"HOT EYE" IN ASSOCIATION WITH GOUT.—MR. JONATHAN HUTCHINSON, in a note on this subject, says: The following item of evidence is, I think, valuable reference to the connection of certain diseases of the eye with gout. A gentleman, named W., consulted me on account of attacks of irritability, first of one eye, and then of the other. The eye would become a little red, and feel as if he had sand in it. The attacks would usually last from two to four days, but they recurred very frequently, and were a source of much annoyance. He had made his own diagnosis before coming to me, and remarked, "I never knew what they meant until, a year ago, I had an attack of gout in the great toe." He was of dark complexion. He had, of late, been very careful in his habits, but he inherited gout strongly on both sides. Having noticed the identity of names, I asked him if he was a relative of a certain Dr. W. "Yes," he said, "I am his first cousin, and there is the same inheritance in both of us." In the latter case the patient, then a young man, lost one eye from recurrent attacks of iritis, and had much damage to the other. His case is given in the series which I have published, illustrating the peculiar form of destructive iritis which goes with hereditary gout. Thus the two cases support each other, and afford strong evidence: firstly, as to the connection, with inheritance of gout-tendencies, of the destructive form of iritis; and, secondly, with personal proclivity to gout of the "hot eye."—*Brit. Med. Jour.*, May 29, 1886.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00

SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JULY 24, 1886.

HEPATIC PRESSURE AND THE CONDITION OF THE RIGHT SIDE OF THE HEART.

In the *Lancet*, of May 15, DR. W. PASTEUR calls attention to a rather novel and apparently valuable method of estimating the condition of the right side of the heart. It has been known for some time that when, under certain conditions, pressure is made over the liver a distension of the superficial veins of the neck is seen. Dr. Pasteur has found that in cases which showed evidence of great over-distension or failing compensation in the right heart, there is a distension or over-filling of the external jugular veins, apparently from below, with or without pulsation or undulation, which takes place when pressure is exerted in the right hypochondriac or epigastric regions with the flat of the hand, the direction of pressure being backwards and upwards. The patient should be first placed in the recumbent posture, with the neck slightly extended and the head turned a little to one side, care being taken that the muscles of the neck are not in a state of tension. "The sign is usually best marked on the right side, but may in almost every case be demonstrated on the left side also. It is essential that the movements of respiration should be normally maintained throughout the examination."

Dr. Pasteur believes this sign to be invariably present in well-marked tricuspid incompetence, whether functional or due to disease of the valves. This he has had confirmed by four autopsies. And besides these cases there are a considerable number which ultimately recover, in which the sign is present at one time or another with varying intensity. "Such are instances of mitral valvular disease, whether regurgitant or stenotic, and of chronic pulmonary emphysema, complicated with acute or severe general bronchitis." Dr. Pasteur has frequently observed a partial filling in of the supraclavicular fossa when the pressure is first made, and this is especially marked in thin subjects. It may perhaps be accounted for to some extent by simple mechanical displacement; but he thinks it chiefly due to an involuntary arrest or modification of breathing, and almost always subsides in a few moments. Of course the amount of pressure required varies in different persons, and in some cases there may be such rigidity of the abdominal muscles that pressure cannot be made directly upon the liver. The pressure should be gradual and steady, as otherwise an attack of coughing may be induced. The manipulations should be discontinued on the occurrence of pain.

Should this sign be regarded as evidence of slight tricuspid incompetence, or simply of great over-distension of the right heart falling short of tricuspid failure? This is an important question, as these are the cases in which we must consider tricuspid incompetence from a prognostic point of view. "Venous pulsation is generally absent, and often the cervical veins are but slightly distended. Not infrequently there is undulation at the spot where the distension of the vein ceases. This may be systolic only, or double, and synchronous with the heart beats. The valves of the external jugular veins are usually competent, and the veins empty completely with each inspiration, The effect of pressure below the ribs varies in these cases with the amount of obstruction to the venous return. 1. In the least marked cases, the vein, although not perceptibly distending under the pressure, is seen, nevertheless, not to empty completely during inspiration. 2. In others a degree more severe, a moderate distension results; the vein becomes visible as far as the anterior border of the sterno-mastoid muscle, more rarely as high as the angle of the jaw. At the same time the spot where the undulation was visible becomes shifted higher up the vein, and the character of the undulation is not infrequently modified, the double variety being replaced by a simple systolic flicker, the single variety usually disappearing altogether. 3. In cases yet more severe, but in which the usual signs of tricuspid regurgitation are not developed, the pressure sign is often elicited with great distinctness, with or without undulation, and is, I think, here to be regarded as indicating early tricuspid failure." In the second class of cases, differing from the third in degree only, Dr. Pasteur is inclined to think there is great overdistension of the right heart, possibly with excessive strain on the valve-cusps, but falling short of regurgitation.

What is the mechanism of the production of this phenomenon? Undoubtedly it is complex. Dr. Pasteur suggests the following factors as entering into it: 1. Compression of the inferior vena cava by the liver, especially in cases in which the liver is enlarged. It is not necessary that the liver should be enlarged, but this compression of the vena cava by the liver probably acquires more importance in cases of tricuspid regurgitation with pulsating liver. 2. The second factor is probably a lessening of the inspiratory action of the thorax from interference with the movements of the diaphragm; and Dr. Pasteur thinks this a more important factor. "It may be urged against it that, if true, pressure below the ribs should produce the same effect in healthy individuals. But I think it may be fairly argued that, whereas in health the heart and lungs may, and do almost immediately, adapt themselves to slight modifications of pressure, etc., within the thorax, it does not follow that in disease they possess the same capacity." 3. Direct mechanical interference with the proper movements of the right side of the heart is probably the third factor, and will be readily understood when we recall the anatomical relations of the right auricle and ventricle to the diaphragm and liver.

The absence of this sign may be a valuable diagnostic guide. Dr. Pasteur reports a case in which there were symptoms of severe bronchitis and emphysema, the external jugular veins being distended and filling rapidly from below, but not pulsating visibly. Examination of the chest showed nothing beyond marked emphysema and somewhat increased resistance, without dulness, and slight bronchitis of the larger tubes. Firm pressure below the ribs produced no change in the external jugular veins, and there was no clear evidence of obstruction of veins within the thorax. On this evidence a diagnosis of intra-thoracic growth obstructing the superior vena cava was made, and the diagnosis was confirmed by the autopsy.

CREMATION.

"A HASTY ENDORSEMENT.—At the last meeting of the American Medical Association the following resolution was adopted by a majority of 159 to 106: '*Resolved*, That cremation or incineration of the dead has become a sanitary necessity in populous cities, and that this Association advises its adoption.' This is an example of the hasty and careless action which too often characterizes our societies. While cremation is an excellent thing for those who like it, it has not yet been demonstrated that it is 'a sanitary necessity in populous cities.' The cremationists have not yet been able to trace a disease, much less an epidemic, to the suburban graveyards of our populous cities. We have always commended the practice of cremation as an advance in sanitation, but it is too soon to call it a necessity."—*The Medical Record*, July 17, 1886, p. 72.

We have copied the above paragraph entire from a recent number of *The Medical Record* for the purpose of correcting the erroneous impression it conveys concerning the action of the Association on the subject of cremation at its last meeting. The official record of the proceedings shows that on the third day of the meeting of the Association Dr. J. M. Keller made a report on cremation which closed with the resolution quoted by the *Medical Record*. A motion to lay it on the table was negatived. Then, under a call for the previous question cutting off discusssion, the resolution was adopted by a vote of 159 to 106, as stated in the *Record*. But a motion was immediately made to reconsider that action which was carried by a vote of 198 to 70. Then, on motion of Dr. John Morris, of Baltimore, both the report of Dr. Keller and the resolution appended were referred to the Section on State Medicine. The following day the Section on State Medicine reported to the general session of the Association the following resolution, which was adopted: "*Resolved*, That a Committee of this Section be appointed to *further consider* the subject of cremation, with instructions to report their conclusions to the Section at the next annual meeting of the Association." The President appointed Drs. J. M. Keller, of Hot Springs, Ark., John Morris, Baltimore, Md., F. Formento and Samuel Logan, of New Orleans, La., and G. S. Franklin, of Ohio, on the Committee.

It is thus evident that instead of "A Hasty Endorsement," the American Medical Association is likely to take quite as much time for the consideration of *cremation* as the most conservative could ask for.

A STUDY OF THE SENILE TESTICLE.

In the May, 1886, number of the *Annales des Maladies des Génito-Urinaires* is an article under the above title, by H. G. ARTHAND, in which the following conclusions are drawn: "1. At about the age of 50 years the human testicle is subject to a gradual regression which induces atrophy. 2. This atrophy is characterized by a marked pericanicular sclerosis and by the disappearance of the epithelial element. 3. As a result of the sclerosis there appear atrophy of the seminiferous tubules, varicose dilatation of the ducts of the epididyma, and later the formation

of cystic cavities. 4. The sclerosis and its accessory phenomena may be regarded as the result of vascular lesions and of the insufficient nutrition of the seminal glands in advanced age."

It would be interesting to know where M. Arthand obtained the specimens from which such extraordinary conclusions were drawn. To take the conclusions seriatim, we are informed that at about the age of 50 years the testicle is "subject to a gradual regression which induces atrophy." We are not informed as to the time at which the atrophy appears after the beginning of this gradual regression, though it would be supposed that it follows at an early date after the age of 50 years. Are we then to draw the (legitimate) conclusion that a man who marries at or after the age of 50 years may not reasonably expect children? This conclusion is certainly legitimate from the premise; but is as certainly untrue. That the inference drawn does follow is shown by the second conclusion, that "this atrophy is characterized by a marked pericanicular sclerosis and by the disappearance of the epithelial element;" and by the third conclusion.

It is impossible to believe that M. Arthand could have examined the organs of healthy men; or if he did we can only conclude that M. Arthand's countrymen decay at an earlier age than men of other nations. For an atrophied testicle, and one characterized by sclerosis and loss of epithelial element, certainly cannot be of much if of any service. Furthermore, the loss of virile power must begin before the age of 50 years, since we are told that "the sclerosis and its accessory phenomena may be regarded as the result of vascular lesions and of the insufficient nutrition of the seminal glands in *advanced age*." If this be true the decay must begin some time before the age of 50 years, as it cannot be supposed that a previously healthy organ can take on lesions, which are the rule and not the exception, which will cause its decay in a few months. These vascular lesions and insufficient nutrition of the seminal glands (by which term we are to understand *testicles*) occur in *advanced age*, we are told, and cause the sclerosis and atrophy which appear at about the age of 50 years. We cannot believe that M. Arthand's countrymen are in *advanced* age, or in a state of senile decay at, and even before, the age of 50 years; and certainly men of other nations are not.

THE CURATIVE POWERS OF ERYSIPELAS.

Fehleisen, we believe, was the first to inoculate erysipelas for the purpose of curing certain forms of skin disease, and since that time various facts have been adduced to show that this affection has an undoubtedly curative effect on certain tumors and affections of the skin.

BIEDERT has recently (*Deutsche Medizinal Zeitung*, No. 5, 1886) described a case of sarcomatous tumor of the mouth, in the case of a little girl, for which he was not permitted to operate, and which was successfully removed by the inoculation of erysipelas. The sarcoma occupied the left tonsil, and was about as large as a hen's egg when he first saw it. Twenty months later the tumor had invaded the whole posterior portion of the mouth and the anterior portion of the throat, the anterior portion of the floor of the mouth, principally the left half of the tongue, and protruded between the lips as an ulcerated mass. It had also grown into the nasal fossæ and attacked the skeleton of the face, and on the right side the eye was partly closed by a mass of exuberant tissue. On account of the fœtid discharge from the mass great care was taken to place the patient away from the others; and it seems that so much care was used that she was placed in a bed which had been a short time previously used by a patient with erysipelas. Three days afterwards she was attacked with this affection, more especially on the exposed ulcerated portion of the face. Though the temperature rose to a great height, Biedert did not interfere in the least with the intercurent affection, hoping that it would have a salutary influence on the sarcomatous tumor. In the six days of the erysipelatous fever the sarcomatous mass melted to an astonishing extent. Suffice it to say that on the sixteenth day after the development of the erysipelas the tumor had entirely disappeared except a nodule on the tongue, and one in the cicatrix at the ala of the nose, which were removed. It may be added that tracheotomy was performed when she was admitted to the hospital.

WHAT CONSTITUTES A CONSULTATION.

"TO THE EDITOR OF THE JOURNAL: I submit a hypothetical case and several questions for your consideration. As a favor please answer.

"A man requested a regular physician to visit his wife, who was supposed to be in a critical condition, having been delivered a few hours previously (same day) under the care of a homœpathic physician. The physician responded to the call, examined the patient, and gleaned the history of the case from friends, and the homœpathic physician who was present. A prescription (not discussed) was left by the regular physician who retired and saw the patient no more.

"1. Was this a consultation in the true meaning of the term?

"2. Did the physician violate the code, especially Article IV, Section 1? PHYSICIAN."

July 10, 1886.

Answer:—Regarding the hypothetical statement above as strictly correct, we answer both questions in the negative. To visit a patient represented to be in great distress or critically sick, examine the patient and get whatever information can be obtained from those present, even if one of them happens to be a physician, either regular or irregular, and then proceed to administer whatever relief can be afforded, whether it be to introduce a catheter, apply the obstetric forceps, or write a prescription and give the necessary directions for its use to the patient or those nursing him or her, constitutes no more a *consultation* with the physician present in the room than with the nurse or any other party present.

If, however, the physician thus called in a presumed emergency, not only examines the patient and gets all the needed information he can, but also then turns to the doctor present and enters into discussion with him concerning the nature of the case, and its proper treatment, it constitutes an actual consultation with him. See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Vol. IV, page 537.

THE NEW WORK ON RENAL DISEASES, by Dr. Purdy, mentioned in a recent editorial in THE JOURNAL, is published by Lea Brothers & Co., Philadelphia, and can probably be found in the medical book-stores generally.

EPIDEMIC CHOLERA continues to prevail in some parts of Italy, and is extending moderately to the north. But the summer is already so far advanced that there is very little danger of it invading Germany, France or the British Isles, and still less of its reaching this country the present year.

SOCIETY PROCEEDINGS.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Semi-Annual Conversational Meeting, April 22, 1886.

THE VICE-PRESIDENT, JAMES TYSON, M.D., IN THE CHAIR.

W. E. HUGHES, M.D., RECORDER.

DR. GEORGE A. PIERSOL read by request a paper on

MEDICAL PHOTOGRAPHY.

The character of photographical work which the medical man may probably desire to undertake may be divided into three groups: 1, photographing specimens; 2, photographing patients; 3, photographing microscopical specimens; to which, possibly, a fourth should be added—making lantern slides or enlargements for the purpose of illustrating lectures. As to outfit, all of these requirements must be borne in mind. At the present time, possibly the best equipment for medical work would be one of Walmsley's modified copying cameras, as manufactured by the American Optical Company, taking a $4\frac{1}{4} \times 5\frac{1}{2}$ plate fitted with a first-class lens. Regarding the latter, those desiring the best might limit their choice with advantage to the lenses made by Ross, Dallmeyer or Beck. Personal experience with the Beck lens warrants a most favorable recommendation, as its superior qualities adapt it admirably for work requiring fine definition with great focal depth. As a matter of economy the excellent lenses of Daclot might be substituted for the higher priced English glasses. As much less expensive the "Waterbury" outfit (camera, lens and tripod costing but $14) is worthy to be considered. The addition, however, of a light wooden extension is imperative to obtain sufficient length of bellows to reproduce specimens of a normal size—a matter often desirable. A lens adapted for medical work would be a rapid rectilinear combination of about $8\frac{1}{2}$ or 9-inch equivalent focus—a shorter focus lens possessing insufficient focal depth. In addition to the camera and lens, a simple dark room outfit, embracing non-actinic lantern, three trays, graduate, dust brush, light-proof box for opened packages of plates, and a few tubes, is necessary. Proper illumination is essential for satisfactory results. An evenly distributed top light is most desirable. This can be obtained readily from a skylight; such a convenience, however, is frequently wanting. An excellent substitute may be readily had by running the apparatus to the open air and stretching over all a piece of muslin, thus providing a mellow, evenly distributed top-light admirably adapted for photographing specimens. In focussing the use of a focussing glass is advantageous. Focus without the diaphragm on a point lying midway between the extremes of the planes of the specimen; afterwards put in the smallest stop (say No. 128 F., = 45.2 English scale). The small stop necessitates a rapid plate unless the exposure is unduly prolonged. A fast plate and small stop, when properly employed, yield pictures with the best possible definition and great focal depth, qualities very essential to satisfactory representations of specimens.

In order to insure acceptable results a correct exposure should always be attempted. The length of exposure depends upon many conditions—among others, actinic power of the light, this being modified by sunshine or clouds, by time of day, by season of the year; color of the specimen—a tissue deeply dyed with blood requiring much greater exposure than the alcohol bleached organ; character of the sun; size of diaphragm; sensitiveness of the plate; strength of the developer. Since these all modify the duration of any individual exposure, the oft heard comparison as to the bare numbers of seconds given upon various negatives are of very little importance. Each worker must determine for his own conditions

the exact number of seconds required on the ordinary specimens, and with this as a basis meet changing conditions as the occasion demands. While there are many excellent formulæ, the following developer has always answered admirably, and with it, by slight modifications, all kinds of work may be satisfactorily performed:

No. 1.

℞. Pyrogallic acid (Schering's)..... 1 oz.
Sodium sulphite..... 6 oz.
Water..... 48 fℨ.

No. 2.

℞. Sodium carbonate..... 4 oz.
Water..... 48 fℨ.

No. 3.

℞. Sodium bromide..... 1 ℨ.
Water..... 1 ℨ.

Use equal parts of No. 1 and No. 2 with 3 to 5 drops of No. 3 as a normal developer, the entire bulk of the developer being say 3 fℨ. Remember No. 2 accelerates, while No. 3 retards development; No. 1 giving density. A plate is fully developed when the deep shadows show some detail and when the cardinal outlines of the picture show on the back of the plate with reflected light. The most usual failures result from over-exposure and under-development. When a plate blackens rapidly, without the requisite amount of contrast between the high lights and deep shadows being at first present, we may strongly suspect over-exposure. Pour off the developer, flood with water, and then proceed once more with a developer to which say 20 or 30 drops of No. 3 have been added.

The remedy for under-development is evident. Strongly to be emphasized—select a good brand of plate, choose a reliable developer, and only change when there exists a strong reason for so doing; by this plan alone can the peculiarities and valuable qualities of any plate be learned. In addition to these fixed conditions, by at first employing but one lens and a single diaphragm, the path of the tyro is greatly smoothed. In photographing a patient, if possible a skylight should be used; when, however, none exists we can succeed fairly in any well lighted room, preferably one having two side windows. Opposite to window No. 1, and about four feet removed, we place our subject almost parallel, facing the second window. The lower half of window No. 1 is covered with muslin, while over the upper half is partly drawn the shade. Window No. 2 (further removed from the patient, but toward which he looks) is unobstructed. The camera is placed somewhere near the second window. Some simple background should be improvised and the darker side of the subject should be lighted up by a reflector of white muslin. Since the actinic power of light is immensely reduced within doors, our exposure would be unduly prolonged if we used the smaller diaphragms; we are therefore usually compelled to use the larger ones—Nos. 8 or 16. Photographing microscopical specimens requires a camera with a long bellows, 24 to 26 inches. This may be had by adapting to the front of an ordinary camera an extension, which may be readily constructed of wood, cardboard or tin. The inner surface of the entire track of the light from the objective shonld be lined with black paper with matt surface. Any microscope admitting of a horizontally placed tube, with a good stage and centering substage, may be employed. Likewise any objective possessing good definition and flat field may be used. The eye piece is best removed, the camera and microscope being united by simply inserting the draw tube into the extension of the camera and wrapping the joint with a few pieces of some black fabric.

Illumination is very important. Four sources may be considered—lamp, calcium, electric and sunlight. Calcium and the electric lights, while quite satisfactory by way of experiment, are practically debarred by the expense and inconvenience attending their use. The incandescent electric light, at the present time, offers little advantage over good lamplight, and is far inferior to sunlight. It may be stated once for all, that sunlight properly employed is the best possible illuminator for photomicrography. As it requires some care in its employment, and, above all, the devotion of the busiest hours of the day, we may inquire what can really be accomplished by lamplight. Mature consideration and considerable experience justify us in saying that with care and proper manipulation really good photographs may be made with powers up to the $\frac{1}{6}$; of course very much higher lenses may be employed—even the $\frac{1}{15}$ and $\frac{1}{16}$—but thoroughly satisfactory lamplight work with lenses approximating 1,000 diam. is seldom if ever seen. One thing seems demonstrated beyond question: that with any power it is almost impossible to obtain the soft but brilliant micronegative, full of detail and vigor, that sunlight is capable of yielding. For lamp light a lamp with a single moderately broad wick should be employed, the edge of the flame being turned toward the object. For very low powers, 3—1½ inch, no condensing lens is necessary. With higher powers, the interposition of a 4-inch focus plano-convex lens is advantageous, and with still higher lenses (say from the ⅔ up) some form of substage condenser in addition is almost imperative. After many experiments with various forms, a "B" eye-piece as a condenser seems to yield the best results, giving a powerful and evenly distributed illumination. Accurate centering and even distribution are of the utmost importance. First centre the substage condenser. Avoid "pushing" the illumination, as when the condenser is racked too high the margin of the field is destroyed. Experience teaches the advisability of using a slow "clean working" plate (say Carbutt's "B,") in preference to the very rapid brands. A mirror placed at the end of the work table opposite the ground glass of the camera, is of great assistance in adjusting illumination; a small hand glass is also convenient to reflect the picture when hunting fields. The most important, as well as difficult, manipulation is focussing. With a short "pull" there are no special requirements, but when a long camera is extended, removing ground glass to three or four feet, some arrangement of moving adjustment is necessary. The simple arrangement with cord and weights, which we devised eight years ago, and which has of late become extensively used, we still

recommend as meeting all possible requirements. It has been put to the severest tests with powers of over 3,000 diam., and never has been found wanting either in delicacy or accuracy. A modification may be applied to the coarse adjustment.

A focussing glass is indispensable; the point of most accurate focus is where the image seems to melt into the ground glass. Preparations must be well differentiated and thin, possessing sufficient contrast and actinic opacity. In certain cases, by using glass of a complementary color to the stain, excellent results are obtained. While lamplight suffices for low powers, yet for the high powers or for difficult work, sunlight by all odds is to be preferred. By arranging a simple mirror to swing laterally and vertically, we can substitute the necessity for a heliostat. Light from this mirror passes through a plano-convex lens of 8 inches focus, through a cell of ammonia and sulphate of copper, to the substage condenser. Here, again, accurate centering and evenly distributed illumination are absolutely essential for good results. To those aspiring to the best results, especially with difficult subjects and high powers, a trial of sunlight is strongly urged, as by this illumination alone are many of the capabilities of photomicrography rendered possible.

Succeeding his address the lecturer exhibited on the screen about fifty examples of various kinds of work. Nearly half of these were photographs of pathological specimens; the remainder were photomicrographs of histological and pathological preparations, taken with objectives giving from the lowest to the highest amplifications, among which an admirable photograph of the bacillus tuberculosis attracted much attention.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, May 6, 1886.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

DR. HOWARD A. KELLY read a paper on

ASEPSIS NOT ANTISEPSIS; A PLEA FOR PRINCIPLES, NOT PARAPHERNALIA, IN LAPAROTOMY.

Medicine, like other branches of science, has been most retarded in its growth by the accumulation of all sorts of useless details. Some of these incrustations still clog the advance of abdominal surgery, and will be given up with a notable diminution in the general percentage of mortality. I refer to the use of carbolic acid and mercuric solutions at the operating table, and to the continued use of any elaborate abdominal dressing.

The use of antiseptics in the patient's belly is full of danger and inconsistencies, for the following reasons: 1st. If used in strength sufficient to certainly prevent sepsis, the patient is very often killed along with the germs. I have myself seen death from carbolic acid poisoning. The *American Practitioner*, November, 1881 (p. 261), quoted by Dr. Goodell: "The first four cases done in the theatre at the beginning of last session had hæmorrhage from the kidneys and two of them died. I never had anything like that before. It was purely carbolic acid poisoning; of that I have no coubt whatever." Thomas Keith speaks of several cases in his own practice, and references might be indefinitely multiplied. Regarding the use of bichloride solution, it is sufficient to say that its use has been very much curtailed in all maternity hospitals even as a vaginal wash. The line is here a very broad one, for the limit appears only to depend upon the most variable of all factors, the individual susceptibility.

2d. It is the great tendency of all operators, and in particular their assistants, to forget the principle involved, and pin their faith to the accidental means of establishing it. This can be seen abundantly illustrated in almost any hospital in the land, where a clean napkin worked around the joints and grooves of the instruments in use, or carried under the nails of the operator's fingers, will exhibit sad evidences of soil. Then, too, the actual conduct of the operator is often modified by the false sense of security begotten by the incomplete use of antisepsis. I saw this well illustrated by a surgeon of more than local repute. The case was a herniotomy, in which a large femoral sac was opened. The spray was throwing out a dense cloud, instruments and sponges were immersed in a two per cent. solution of carbolic acid, and elaborate dressings were ready. A coil of intestine protruded from the wound for several inches, and it lay, first, on the old hospital blanket below, and then, in the effort to reach the ring, was turned upon the night-gown above. The antisepsis was here made a farce by these and other glaring inconsistencies.

If germicides must be used at all, let it be before the operation, and in strength sufficient to neutralize any sepsis about instruments, sponges, etc. Then let the operator go to work with clean instruments, clean sponges and clean hands, and he will need no antiseptic, and the patient's belly will no longer be a battle-field where germs and solutions fight, often with such direful results to the host. It is my belief that it will not be long before the day of solutions will be past, and that in the future the successful surgeon will go to his work with pure water or dry pans for his instruments, and fluid enough to cleanse sponges. My own practice has been to use hydrant water boiled for an hour and allowed to stand, or better still, distilled water, as used by Prof. Schroeder, and independently suggested and used by my friend, Dr. Joseph Price. I do not believe that reservoir water, dirty as it often is, ever contains any of the specific matter productive of septicæmia; but the process of boiling and using only the supernatural liquid makes it perfectly harmless.

Another fallacy discarded by some of the greatest operators but perpetuated by many, is the transferrence of the use of the elaborate Listerian dressings of general surgery to the abdominal wound. These dressings, so manifold and multiform, are clearly intended to prevent sepsis from penetrating the now closed abdominal wound. This is an accident which fortunately never occurs in the intra-peritoneal method. The rapid agglutination of peritoneal surfaces effectively closes the sac. A sterile dry pow-

der will absorb the slight serous discharge at the edge of the wound and suture exits, and above this some absorbent cotton and a firm bandage is all that is required.

While the danger of infection of the peritoneum through the closed wound is nominal, that of an infection of the belly wall through stitch holes is very great, and this is best prevented by the dressing recommended by Keith, of carbolic acid and glycerine, one to eight parts.

With the mind thus freed from the notion that these solutions and dressings are accomplishing anything—from two such dangerous fallacies—operators at large will then work with a living consciousness of the real conditions of success, and they will then be on the alert from the beginning of the operation to its close, keeping within the mental horizon an exact knowledge of everything coming into contact with the patient's belly.

The expression of my convictions and practice will be of value in so far as they are in accord with the following letters upon the subject by the two greatest abdominal surgeons in the world, Lawson Tait and Thomas Keith. Lawson Tait, in a letter dated March 15, 1886, to the writer, says: "I still use tap water, and nothing else; it is never boiled. My instruments are prepared by being washed in soap and water merely. I use no elaborate dressings for the wound, never using anything at all except absorbent cotton wool. Yours very truly,

LAWSON TAIT."

From a communication from Thomas Keith, of Edinburgh, written March 18, 1886, I make the following extract: "The secret in abdominal surgery, the secret in all surgery, consists in carrying out the antiseptic principle. You may do this in a simple way or you may do it in a complicated way. All instruments, needles, forceps, sponges, etc., everything about the wound, must be disinfected. A weak carbolic solution applied to the wound can do no good, nor harm. You may safely use hot water. My instruments, after an operation, are scrubbed with a nail brush, especially the forceps points. This is repeated before the next operation with a five per cent. solution of carbolic acid. The greatest risk is that we put in septic matter on our hands, instruments, and sponges. Sepsis may come from the wound, but it rarely ever penetrates inside. I use a simple dressing of gauze, eight or ten folds, soaked in one to eight carbolic acid and glycerine, extending two or three inches or so beyond the line of incision on all sides. Over this some ordinary cotton wool, a flannel bandage, and nothing else. Use this and you will never use anything else. And don't look at it for a week or ten days. You ought, for the patient's comfort, to put on an antiseptic dressing of some kind. You will probably often have suppuration with stitches if you do not. Yours sincerely,

THOMAS KEITH."

DR. MONTGOMERY felt great interest in Dr. Kelly's remarks, reinforced as they were by the letters from Tait and Keith. The antiseptic method of treatment has done a great work for surgery, and the successive steps of Listerism and cleanliness have brought it up to the comparative certainty of result now attainable. We can now eliminate almost entirely the antiseptic agents, carbolic acid, mercuric chloride, thymol, etc., and can do as well by the most rigid attention to cleanliness in all details of hands, instruments, sponges, and the skin of the patient. Some years ago he felt gratified that, in a patient upon whom he operated before a class at the Philadelphia Hospital, with Listerism and the carbolic spray, the temperature did not rise above 102°. Now, in his private hospital, with rigid attention to cleanliness and thorough washing of the peritoneal cavity with hot water, the highest temperature will be below 100°. After operations involving the opening of the peritoneal cavity, if there has been any opportunity for the escape into it of blood, pus, or cyst contents, he washes it out thoroughly with hot water. After closing the wound he closes it with sublimated gauze and absorbent cotton, and secures this with strips of plaster and a bandage. This dressing remains a week without need of disturbance. If gut sutures, or silk rendered aseptic by a coating of wax with carbolic or salicylic acid, be used, there will be no trouble about suture abscesses. In a recent case, in which the abdominal walls were two inches thick from adipose deposits, these precautions were observed and there was not the slightest suture trouble. He does not now consider the spray of any value; because we cannot use carbolic acid solutions strong enough to certainly destroy germs without poisoning the patient, and the spray only washes the germs down into the wound.

DR. CHARLES HERMAN THOMAS remarked that the experiments of Dr. Sternberg, of the Johns Hopkins University, a careful and conscientious observer, have developed the fact that some of the antiseptic solutions in common use, three per cent. carbolic acid, for instance, actually stimulated the growth of bacteria. Perfect cleanliness is the essential point, the foundation of surgical success. He has seen Dr. Kelly operate without disinfectants, his instruments being placed in a dry pan, and his results prove the truth of the assertions he has made this evening.

DR. M. PRICE had experienced great difficulty in his attempts to secure absolute cleanliness. He has seen half a dozen unclean hands introduced into a peritoneal cavity during operation, simply from curiosity; sponges picked up from the floor, napkins from a dusty window-sill, instruments from a soiled blanket, and each used on peritoneal or absorbent surfaces; sponges that have been filled with pus used again in the peritoneal cavity, and in general, extreme thoughtlessness in the little details of cleanliness that compelled the full power of antiseptics to bring good results. He has had good results in pyosalpinx even where purulent cysts have burst in the abdominal cavity, but he allows only the operator's hands to enter that cavity, and practices the most thorough washing out with clean water. He has been burned by simply holding a carbolized ligature in his mouth for a few minutes, and feels sure that the retention of a number of such ligatures in the abdomen would be quite likely to give rise to trouble.

DR. CHAS. MEIGS WILSON said that cleanliness, by

whatever means obtained, is the great element of success in abdominal surgery. As absolute cleanliness can best be obtained by the use of agents possessing germicitic and anti-putrefactive properties in the preparation of the atmosphere, the operator's person, the instruments, sponges and dressings, it seems to be the part of wisdom to employ such agents up to the time of and even during the operation. With a perfectly clean room and furniture, clean air, clean instruments, and clean hands, possibly no antiseptic agent would be needed. But unfortunately, such conditions do not universally or generally exist, and to attain them we must resort to the use of some efficient antiseptic. Care should be taken to employ some agent which is efficient and at the same time non-poisonous. In English and Continental hospitals, where excessive antiseptic precautions are employed, the success attained compared with the previous mortality rate proves unquestionably the great value of such precautions. The united testimony of experienced American operators as to the value of antiseptic precautions should not be set aside. I believe that all instruments should be submitted to the purifying influence of dry or moist heat. That the towels, sponges and dressings should be left for twenty-four hours in a boiling hot solution of mercuric chloride 1 to 2000, and that the silkworm-gut or fine wire sutures and ligatures should be kept in a very weak solution of carbolized oil. To my mind the terms antiseptic and aseptic are synonymous. My own experience has taught me that the best and least dangerous antiseptic agents are those which prevent or retard putrefactive changes, rather than the more dangerous class of agents which possess decided germicitic powers.

DR. PARISH said that antiseptics are not intended to take the place of cleanliness. The greater the care bestowed on cleanliness in all details the less will be the need for antiseptics. Boiled water, filtered, is a good washing material; patient hands and instruments must be clean to insure good results. Absorbent lint, wet at time of using with a 1 to 2000 mercuric chloride solution is a good external dressing. Dr. Parish agreed with most of Dr. Kelly's statements, but he believes in the value of antiseptic vaginal injections after labor in hospitals. The maternity wards of the Philadelphia Hospital showed a large number of deaths, varying from three to ten per cent. for many years prior to 1885; but last year, in 247 cases of labor there were but two deaths. One of these was after Cæsarean section in a patient who had been in labor nearly three days before she was brought into the hospital. The other fatal case was in an idiot, and was largely from other causes than the labor, which was not at fault. These good results are due to the use of mercuric chloride injections principally, although we have now new wards and opportunity for frequent change of nurses where advisable. In a case of septicæmia following adherent placenta, the patient seemed almost moribund, but hot uterine injections of mercuric chloride, 1 to 4000, stimulated her and lead to recovery. Water is boiled to destroy possible germs, and filtered to get rid of various impurities not held in solution.

DR. M. PRICE thought the heat of the injection used by Dr. Parish was the most important element in stimulating the patient; but the mercuric chloride would do no harm, and the fact that improvement commenced and continued from that time is the important point. The reaction against the use of antiseptics should not be allowed to go too far. They have done great good and can not be discarded.

DR. SOPER, formerly of the Rotunda, Dublin, upon invitation from the President, remarked that this was a very mixed question. That neither cleanliness nor antiseptics could be dispensed with. He has seen cases do well under all conditions without antiseptic precautions, and if the solutions are dangerous we must be cautious in their use. He believes thoroughly in cleanliness, and would use antiseptics when he thought them needed. It does not do to run into extremes.

DR. KELLY replied, in closing the discussion, that he was both surprised and gratified that so many members of the Society had expressed their approval of his paper. In two or three instances, however, he had been grievously misunderstood. He believes it to be the great glory and the crowning triumph of *antisepsis* to have discovered *asepsis*. He had nothing whatever in common with those surgeons who claim that antiseptics have done nothing. The peritoneum is a vast, exquisitely sensitive "culture" sac. In the old time chance decided whether the uncleansed hand of the surgeon carried in suitable germs to multiply in the medium, and the chances were greatly against the patient. Now the use of antiseptics accidentally involves rinsings and cleansings which make the surgeon a clean man in spite of himself; and the patient generally escapes. In a more advanced position, and the one in which the surgeon is living up to a *principle*, the utmost precautions are taken by a preliminary use of antiseptics in sufficient strength, and he goes to his operation needing no germicides.

Let the battle-field be without the patient's belly and the germicide will there be sure of the victory every time. Statistics from foreign nationalities as quoted, instead of proving against, are one of the strongest arguments for, this position, for there the use of the germ-destroying agent is wholly *without* the patient's body.

(*To be concluded.*)

CHICAGO GYNÆCOLOGICAL SOCIETY.

Forty-Sixth Regular Meeting, Friday Evening, April 23, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

DR. CHARLES CALDWELL read a paper entitled,

REPORT OF A CASE OF HERNIA OF THE UMBILICAL CORD.

I was called August 10, 1885, at 6 P.M., to attend Mrs. C., who was in labor with her ninth child. I made an examination and found a vertex presenta-

tion, first position; os well dilated but no bag of waters had formed.

The first stage of labor was completed at 7 P.M., and the second an hour later. The child, a female, was quite large with very broad shoulders, which were difficult to deliver. As soon as the child was expelled, I discovered she had a large umbilical hernia. I ligatured the cord and gave the child to the nurse, who removed it to another room, that the mother might not be alarmed at sight of the tumor.

The placenta was expelled by Credé's method and the uterus contracted firmly under pressure of the left hand.

After the binder was applied and the mother made comfortable, I examined the tumor more carefully. It was as large as a small orange and of similar shape. The circumference in the largest place—the centre—was about ten inches. The diameter of the orifice or abdominal opening, two inches. The sac was translucent and the viscera—intestines—could be distinctly seen when the child cried and forced them out. The umbilical vessels were on the left side of the sac. The skin was projected from the abdomen on to the side of the sac at its base about half an inch.

Diagnosis.—Hernia of the umbilical cord.

Pathology.—Ectopia of some or all of the abdominal viscera at the point of insertion of the umbilical cord, is usually due to an arrest of development of the abdominal parietes, and failure of the intestines originally projecting into the vitelline duct to return into the abdominal cavity. Simpson thinks it may sometimes be traced to peritonitis. Cleft abdominal walls, similar arrest of development to that of cleft sternum, may exist in the muscular structure of the front of the abdomen, which may expose the whole contents of the abdomen, or the central line of the abdomen may be weak from deficiency of muscular structure.

If the orifice is very small, it can be treated successfully by a simple compress and adhesive straps. But if large, nothing except a plastic operation is indicated.

The coverings of the hernial sac are, from without inwards (*a*) amnion, (*b*) peritoneum.

Treatment.—After examining the sac thoroughly I was convinced that nothing but surgical interference could save the child's life.

I called our President and Dr. Jaggard by telephone, but both were too busy to assist me that night. They both recommended a cork compress held in position by adhesive strips, evidently thinking it an ordinary case of umbilical hernia. I decided not to operate until the next day, and enveloped the sac with absorbent cotton, retaining it in place with a loose band.

The next afternoon, Drs. Dudley and Jaggard met me in consultation. After examining the little patient, they decided with me, that nothing but surgical interference would give her any chance of life, and kindly assisted me in the operation.

It was decided not to give an anæsthetic. Dr. Jaggard seizing the sac, gently forced its contents, the viscera, back into the abdominal cavity and I ligatured it as close to the abdomen as possible, but did not draw the ligature perfectly tight. At the suggestion of Dr. Dudley the sac was now opened, to be sure no portion or loop of the bowel was confined by the ligature.

The peritoneum being opened, the index finger was passed into the abdominal cavity to hold back the bowel and protect it from the points of the hare-lip pins, which were passed at right angles to each other through the narrow piece of skin at the base of the sac. Two more ligatures, carbolized silk, were applied beneath the pins and were drawn tight enough to close the opening. The outer layer of the sac was trimmed off, leaving a stump one and one-half inches long. Dr. Dudley passed a gathering suture round the stump, sealing it more tightly. This completed the operation; after which the stump was dressed with iodoform—a narrow strip of carbolized gauze passed beneath the pins—several layers of absorbent cotton and a roller bandage. The child was restless that night, crying several times, but slept well the next day. I dressed the stump every day, reapplying a similar dressing. The bowels moved naturally until the 16th, when I discovered some fæcal matter on the dressing as I removed it.

On the 17th, all the fæces passed through the fistulous opening. The members of the family were very much alarmed and wished me to close the opening at once. I assured them that nature would close it without any further surgical interference. I called on Dr. C. T. Parkes for his advice. After hearing the history of the case he said it would undoubtedly close by granulation in a few days.

For four days all the fæces passed by the fistulous opening, but on the fifth there was a little stain on the diaper. On the sixth more, and on the seventh all the fæces passed *per rectum.*

The family were happy once more, for the fistula had closed. There were no symptoms of peritonitis at any time. Neither vomiting, tympanites nor pain. The patient did not cry more than babies generally do, but nursed and slept nicely, requiring no unusual care.

The bowel, at point of perforation, was held firmly bound to the abdominal walls by lymph, which was thrown out.

From this time the wound healed very rapidly. The end of the stump sloughed, leaving it quite short. The small intestine was probably the one perforated, for there was no odor to the discharges.

What caused the rupture of the bowel to take place I am unable to say. Probably, either a portion of the bowel was caught, and became strangulated by the ligature, or it was punctured by a pin, as that instrument was inserted.

Dr. Dudley says the surgical operation was certainly a laparotomy, for the abdominal cavity was opened and the index finger introduced.

DR. DE LASKIE MILLER said he had seen numerous cases of hernia, but thought this specimen was possibly more extreme than he had seen.

THE PRESIDENT asked Dr. Miller in how large a hernia he would deem operative procedure, of a plastic nature, necessary.

DR. MILLER did not think it possible to state, by

actual measurement; so much depends upon the condition of the tissues surrounding the opening, that the absolute diameter of the opening would not be the governing principle. If the borders of the opening are of considerable thickness and the tissues well developed, it would be possible to reduce and probably cure a hernia independently of any cutting operation. He inferred that in the case described in the paper, there was a deficiency of all the tissues except the peritoneum and the amnion, the skin projecting upon the sac one-half inch around the opening. He thought there was another explanation possible in this case, viz., that the duct leading from the umbilical vesicle remained or become patulous and the fæcal matter passed out through that; for the duct can be seen in the cord, even at delivery, in some cases. He inquired as to the cause of the arrest of development of the abdominal parietes in such a case.

DR. EDWARD WARREN SAWYER thought it not a very unusual thing to find a prolongation of the intestine into the cord. He once came very near tying the cord including a loop of intestine, so near that he had since observed the rule to always satisfy himself, by careful manipulation of the cord, that it contained no loop of intestine, and this routine practice had revealed the fact that very often a suspicious enlargement of the cord is found, sometimes extending three-fourths of an inch above the level of the abdominal wall, and the intestine, or portion of the omentum, is not infrequently projected into this cul de sac. He thought in the majority of cases nature would take care of the condition without any attention from the attendant. He had never seen so large a hernia as that described by Dr. Caldwell, and did not understand why it should have assumed a spherical shape; he could understand how it might be pyriform or sausage-shaped, and extend an inch or two into the cord, but how the cord could suddenly dilate and form a large globe, and this globe be followed with the contents of the abdomen, it was difficult to comprehend.

Dr. Sawyer inquired what there was about this case that enabled the physicians to decide so quickly that an operation must be resorted to in order to save the child's life. To him an operation would have been a second consideration. Dr. Jaggard evidently reduced the hernia without difficulty, and having reduced it, it seemed to Dr. Sawyer that a well applied bandage would have secured it. The operation was brilliant and creditable, but he thought an operation should have been considered, after the attendants had failed utterly to secure the hernia within the cavity by a well applied bandage.

It was stated in reply to questions that the child presented no symptoms; the hernia was reduced by Dr. Jaggard; the tumor about the size and shape of an orange; the operation was performed the day after birth; there was no evidence of strangulation of the gut.

Dr. Sawyer said that Dr. Caldwell had assured him that he was certain that in passing the hair-lip pins no part of the intestine was included, and the finger was introduced to push everything beyond the reach of the pin. Dr. Sawyer thought, however, that the centrifugal pressure must have been considerable, and the contact quite severe. He thought it strange that none of the fæcal matter escaped into the peritoneal cavity, although there were adhesions between the intestine and abdominal parietes.

THE PRESIDENT: Of course every case must be decided on its merits, but might we not hope for the closure of the opening of an inch and a half in diameter, provided the tissues are well developed around it, without a cutting operation? It would seem possible to close as large an opening as in the case under discussion by simple adhesive strips. He had seen one case that reminded him of this; the opening was not as large, it did not exceed three-fourths of an inch in diameter, and the length of the sac was much longer than the opening. Into this sac there was projected a solid body. As the child afterward died, he found is was the *lobus Spigelii* of the liver. It was so conical, or heart-shaped, that the anatomy could not be made out until after death. The instruction to him in that case was the importance of not including any of the abdominal tissues by the ligature that might be passed around. He was careful to pass the ligature around the umbilical cord so as not to include the sac, but it might readily have been passed close to the abdomen and made to include the solid tissue, which, as he afterwards found, was a portion of the liver. The child died, not from the hernia, but from some want of development which he was unable to find out, no careful post mortem examination being allowed, but he believed there was lack of fœtal development necessary to life. The child was fairly well developed, and seemed as if it should have lived, so far as this slight defect was concerned.

The PRESIDENT asked if any one could suggest the reason for the fæcal fistula. It seemed to him that in this case it was the result of inflammation caused either by pressure against the pins or the ligature; if the intestinal wall had been punctured by the pins, the physician would have seen evidence of it earlier.

DR. J. H. ETHERIDGE inquired whether this was not the youngest laparotomy on record. He wished to know if it would not be possible to crowd back the viscera and then hold them in place with adhesive strips.

DR. T. D. FITCH said that he had not had experience with congenital hernia at birth, but had seen it occur within twenty-four hours afterward, and had successfully closed an opening an inch or an inch and a quarter in diameter by the ordinary method, viz.: compress and bandage.

Dr. Fitch had had very peculiar success in the treatment of infantile umbilical hernia by the ordinary means, and he should hesitate very long about an operation until he had tried all the ordinary means. His method of treatment differed somewhat from the ordinary treatment, however, in the adoption of an elastic web bandage instead of the ordinary bandage or adhesive plaster, and he thought it far superior to an inelastic bandage, as it gave the child room for an accumulation of intestinal gases, which very often become painful when a fixed bandage is placed around

the abdomen. He first applied a hand compress, like a button-hole—(plano-convex)—to cover the opening, This should be large enough to extend three-eighths of an inch beyond the margin of the opening, and should be covered with one or two thicknesses of fine soft muslin. After returning the protruded substance *perfectly*, the compress should be fixed in position by short adhesive strips, then apply the elastic webbing around the body of the child tolerably tight, and let each turn of the bandage lap the previous one half its width, making a sufficient number of turns to cover six or eight inches of the abdominal surface vertically. He would leave this on, undisturbed, unless the child became restless, or exhibited some indication of injury, for a month or longer before removing it. He had never found that the skin suffered from the confinement of the perspiration.

Another advantage was that the elastic webbing being rough and the lips of the bandage holding each other, it always stayed in place, and held the button firmly and so secured the opening against any possibility of protrusion. He had used this method successfully for about thirty years. He had a case at Waukegan, which occurred twenty-four hours after birth; did not attend the mother at the birth, but was called to treat the hernia which was reducible, and would gurgle in and out at almost every respiration, bulging out as large as an English walnut. He visited the child only once, and told the parents to remove the bandage at the end of four weeks, when the opening was found entirely closed. The child is now 9 or 10 years old, perfectly healthy and always has been.

Dr. Charles Caldwell: The Fellows of the Society have evidently misunderstood the nature of the case described in the paper. I am sorry that such obscure and confused conceptions have been conveyed. The case was one of hernia of the umbilical cord, consisting in "the escape from the abdomen, at the point of insertion of the cord," of some of the fœtal abdominal viscera, and was due either "to arrested embryonic development, preventing the complete closure of the abdominal cavity, or failure of the fœtal intestines, originally situated outside the abdomen to enter the same" (Lusk). The remarks of most of the Fellows are accordingly irrelevant.

As no one who witnessed the operation was present at the discussion of my paper, several questions were unanswered.

Dr. Sawyer wished to know why we decided so quickly that surgical interference was necessary to save the child's life?

The consultation was held about twenty hours after the birth of the child, and at that time the outer layer of the sac, the amnion, was dark and gangrenous in several spots. Its nutrition was cut off when the cord with its umbilical vessels was ligatured, and it would have sloughed off in a few days, leaving the viscera covered by the peritoneum only. We were of the opinion that such a condition as then existed would be followed by general peritonitis and death without some surgical operation.

Dr. Byford wished to know the literature of the subject. He had been able to find but one case similar to his. Thomas Bryant, in the last edition of his "Surgery," mentions the only case he ever saw and his treatment. In June, 1876, a child, one day old, was brought to him with hernia of the cord. The sac was translucent, the size of a small egg, and contained the cæcum and vermiform appendix. He pressed back the bowel with the thumb and forefinger, stitched up the cord at the umbilical orifice with deep sutures and ligatured the cord itself at the apex of the congenital hernial sac.

Recovery was complete without a single bad symptom. He recommends his operation in all similar cases, evidently considering it the only treatment indicated. So we were supported by the best of authority, in operating instead of trying to apply a compress. Should I ever meet with a similar case, I would perform an operation different from either Bryant's or mine.

I would first remove the amniotic layer of the sac, if it could be separated from the peritoneum, excising or amputating it at its junction with the skin, return the viscera and peritoneal sac to the abdominal cavity and close the abdominal opening as in a case of exploratory incision, or simple laparotomy. Either incising the peritoneal sac to better protect the bowels from needle points, or stitch to the bottom of the wound by deep sutures, and support the sutures by adhesive strips around the abdomen. I would recommend this operation after observing how quickly the amnion sloughed away. It might just as well be removed at once if it can be easily separated from the peritoneum.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

[We are permitted to publish, for the information of those intending to visit Europe, the following translation of a letter addressed by Dr. Cornil, of Paris, France, to Dr. E. W. Cushing, Hotel Pelham, Boston, Mass.—Editor.]

Dear Doctor:—Last year, in the month of July, you did me the honor of visiting me in my laboratory, Rue Lohmond. We discussed very earnestly the organization of private courses, rapidly made practicable and demonstrative, in which physicians, and especially American physicians, could learn in some months the technique of scientific specialties, such as normal histology, pathological histology, bacteriology, accouchements, ophthalmology, skin and syphilitic diseases, diagnosis, nervous diseases, autopsies. Now, I can tell you that we will organize these courses in union with some of my colleagues in the Faculty of Medicine, and that we will accomplish them with the Assistants and Fellows of the Faculty. For my own part I shall be happy to have them succeed, and that your compatriots may find in Paris, where we have so many resources, all the facilities of instruction that they receive at Vienna.

I am persuaded also that the American physicians and students will receive here a better welcome,

founded on all the sympathies which bind us to the American Nation, and on the desire to sustain the most friendly relations with your medical fraternity. My medical laboratory will contain, besides the necessary rooms for the practical work of the scholars, a hall for private courses in bacteriology, which will be presided over by M. Chautemesse. The courses in bacteriology will last six weeks, and sixteen scholars may pursue the course at a time, having at their disposition all the room and material necessary. This course will be very well organized. I have, besides, a hall for a practical course in pathological histology, which will receive about fifteen scholars, each one having his table at a window. This course will be given by M. Dr. Brault, and will also last six weeks. You probably know Dr. Brault, who has written, with me, a volume on the pathology of the kidneys. M. Brault is an excellent pathologist. M. Chautemesse is well informed on bacteriological technique, and has recently passed a month and a half at the Gesundheitsamt, in Berlin. In accouchements we have the course of M. Bar and M. Auvard, which is well given. M. Bar will give, besides, a more practical instruction in his hospital service, where he will admit some physicians and repeat operations. For nervous diseases M. Babruski, chief of the clinic of M. Charcot, will give some repetitions in the Hôpital de la Salpetrière. For ophthalmology, one has yet only the puzzle of choosing. It is the same case with skin diseases and medical diagnosis. For this it will be very easy to have the lessons by series, with M. Capitan, chief of the clinique at Hôtel Dieu, or with another chief of medical clinic. For normal histology, there are just now demonstrative courses already prepared by M. Lattery. It will be possible to organize an analogous course if this does not suffice, either in the College de France or in my laboratory. As concerns autopsies, I make public autopsies at Hôtel Dieu, and I will let autopsies be made under my direction by persons who are registered. I will do this for all scholars, as the course is public.

You see that we are ready, and I assure you that your compatriots will find here all the means of instruction To obtain information, they may address to my laboratory, which will be Rue de l'Ecole de Médecine, en Façe de la Faculté (fronting the University) or to M. Chautemesse, or to another of my assistants. Yours truly, DR. CORNIL,

19 Rue St. Gaillaume.

Paris, March 6, 1886.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Fifth District Branch Meeting — Intussusception—Large Calculi; Operations for Stone—Epicystotomy for Sarcoma and Papilloma.

After Dr. Van Hoevenberg's paper, spoken of in my last letter, at the evening meeting of the Fifth District Branch of the New York State Medical Society at the Hotel Kaaterskill, the President, Dr. J. G. Porteous, of Poughkeepsie, read the history of an interesting case of intussusception in which about seven inches of the intestines were discharged *per rectum*, and recovery followed without an operation.

Dr. C. R. Wood, of New York, said that it was the fashion now to operate in these cases, and the medical attendant who did not operate or send for a surgeon for that purpose was apt to be looked upon as actually criminal. At the Poughkeepsie meeting of the Fifth Branch he had read a case similar to that of Dr. Porteous, in which recovery also took place, although there was no operation; and such cases ought all to be published. Many lives, he thought, might be saved if this course was more frequently adopted. Laparotomy was very apt to prove fatal, and yet it was frequently resorted to even before other measures had been tried.

Dr. J. W. S. Gouley, of New York, said that he was fully in accord with Dr. Wood, if he rightly understood his views. "Belly cutting" had become such a mania among doctors that one was tempted to suggest that some of its advocates ought properly to be shut up in a lunatic asylum. More lives were lost than saved by laparotomy. While it was a perfectly legitimate operation, and of great service in its proper place, its scope and limitations were not as clearly understood as they ought to be. These limitations were, however, sufficiently well defined; and it was an undoubted fact that many cases recover spontaneously. Some years since he had collected quite a large number of these, and he remembered that in one instance six feet of intestine, and in another a still larger piece, were discharged.

So long as the intestinal canal remained pervious, operative interference was entirely uncalled for; but the moment that complete obstruction and commencing fæcal intoxication occurred, laparotomy should be performed. He believed that the operation was often performed after symptoms of peritonitis had set in, and that under these circumstances it was worse than useless. If the operation had any value at all in cases of this kind, it was when the symptoms of complete intestinal obstruction first showed themselves. Then, and then only should it be resorted to. Afterwards it would be too late.

Dr. John Shrady, of New York, related the case of a lady who was kicked in the abdomen and died three weeks afterward. The autopsy showed the presence of peritonitis, with six inches of invaginated intestine. He mentioned the case, he said, to show the length of time that the condition might last.

Dr. Gouley exhibited a series of specimens of large calculi which had been removed by himself, and which he said he wished to serve as a text for some remarks upon what he conceived to be a safe method of ridding the bladder of these dangerous foreign bodies. There were fourteen or fifteen of these specimens, most of which had been removed by lithoclastic cystotomy; and Dr. Gouley gave a short history of each case; after which he went on to say that surgeons, like women, have their fashions. Too often the sentiment entertained was, "Perish the patient, but let me operate." The operation of lithotripsy and evacuation at a single sitting, the old pro-

cedure revived by Bigelow, at first sight seemed a very simple and easy affair; but the aspiration of calculous detritus as well as the preliminary operation of crushing, was in reality attended by great danger. He had seen two or three hours occupied in these procedures, and the result was very severe cystitis. This would be the consequence whenever any sitting at lithotripsy was prolonged. The operation, therefore, should be short. Yet one case of Bigelow's had lasted four hours, and during all this time the administration of ether was kept up. Even though the kidneys were diseased, the ether had to be gotten rid of through these organs, as well as by way of the lungs and skin; and acute nephritis from this cause had occasioned many deaths. But if nephritis was not caused, there was very liable to result permanent cystitis, which would inevitably shorten the patient's life. In many cases, therefore, cystotomy was far preferable to lithotripsy with aspiration. Two grand objects were accomplished by this procedure, as the patient was relieved, *first*, of prostatic obstruction; and, *second*, of the stone.

Still more recently an operation devised by Franko in the middle of the sixteenth century has been revived, viz.: supra-pubic lithotomy. Within the last eighteen months the operation had undergone what was considered a very important modification, consisting of the elevation of the bladder by means of a rubber bag introduced into the rectum and distended with water. This, however, was a delusive thing. The trouble was not want of space, as any good surgeon could remove the stone without difficulty. The real dangers were three: In the first place, there was a liability of rupture of the delicate peritoneum during a violent fit of coughing or vomiting. The first case in which the operation was done by a certain advocate of this method in New York was that of a child, and it was successful; but it was not to be forgotten that in children the bladder is in reality an abdominal organ. The second case was in an adult, and before the surgeon had left the hospital, after removing the stone, it was reported to him that the intestines were protruding through the wound. The operator believed that he had cut the perineum; but Dr. Gouley was of the opinion that the rupture had probably been spontaneous. The peritoneum was stitched to the abdominal walls, and the patient recovered; but if the accident had occurred at night, the intestine wauld no doubt have become strangulated, and death from peritonitis have resulted.

The second great danger was from extravasation of urine. Dr. Gouley predicted that for ten years the supra-pubic operation would be performed, and that when a sufficient number of deaths had resulted from it, it would be condemned and abandoned. Surgeons would, therefore, have to come back to lithoclasty, on account of its greater safety. The mortality in general in lithoclastic cystotomy was one death in eight cases, and in Dr. Gouley's hands the proportion was still smaller, one in eleven.

He then referred to epicystotomy for sarcoma or papilloma of the bladder. He had had several cases of the latter, and had operated in two of them; but both the patients died. If he were now called upon to perform this operation in an otherwise healthy subject, he said he should be inclined to combine the two procedures; the infra-pubic operation for securing drainage, and the supra-pubic for the purpose of seizing and removing the tumor. This is the only condition in which he would admit the propriety of the supra-pubic operation.

Dr. Shrady said that he should like to ask Dr. Gouley whether he thought the use of certain kinds of drinking-water had anything to do with the causation of urinary calculi. It had been stated that stone had been much less frequent than formerly in New York since the introduction of the Croton water system. Again, it was found that in certain parts of the country it was much more common than in others. The late Dr. Dudley, of Kentucky, had performed an immense number of operations for stone.

Dr. Gouley said that his answer would be an affirmative one, although with a reservation. Potable waters containing such ingredients as limestone did not give rise of themselves to stone in the bladder. Thh impression formerly prevailed that certain potable waters would cause stone because the salts they contained would be deposited; but this was not the case. That brimstone waters were a prolific source of stone there could be no question; but it was in an indirect manner that they produced this effect. They gave rise to dyspepsia and thus caused lithuria and nephritic colic, and finally calculi were passed from the kidneys which were not evacuated from the bladder. These caused irritation of the vesical mucous membrane, and concentric layers of phosphates or urates were formed. The effect of these waters was, therefore, an indirect one; and they not infrequently gave rise to engorged liver, gastric catarrh, and rheumatic and gouty pains.

After some further discussion of the galvano-cautery apparatus presented by Dr. Newman in the afternoon, the meeting adjourned.

When we came out in front of the hotel the full moon was riding high in a clear sky, while below, all over the vast valley of the Hudson, the gray clouds lay banked like the motionless waves of some enchanted ocean. The air was mild and balmy, so that one could sit out of doors with comfort, and the quiet smoke enjoyed while gazing upon a scene so exquisite and impressive is not likely to be soon forgotten by those who were fortunate enough to have that felicity. Some of the party who were especially energetic, and wished to make the most of the limited time at their disposal, actually arose in season to see the sunrise and take a long tramp before breakfast; but the larger number were content to wait to sally forth till after this meal, when stages were in waiting to convey them to Sunset Rock, Inspiration Point, the Kaaterskill Falls and the Mountain House. The Hotel Kaaterskill stands in the midst of the picturesque Kaaterskill Park, through which many miles of charming drives have been constructed, and within a comparatively short distance of the great hotel is to be found a large part of the most beautiful and romantic scenery in the whole Catskill region. An immense outlay, not only upon the house itself, which is the largest mountain hotel in the world, but also

upon its environment, has been made by the proprietor, Mr. George Harding, the famous patent lawyer of Philadelphia, and many superb points which were formerly accessible only to pedestrians can now be reached by carriage roads. There is perhaps nothing finer in the mountains than the grand view of the magnificent Kaaterskill Clove from Sunset Rock and Inspiration Point. From these ravishing outlooks one gets the sweep of the entire Clove; the one commanding the upper portion, with the head at Haines' Falls, and the other the outlet, with the picturesque hamlet of Patenville nestling in the midst of the large gap, and the broad and shining Valley of the Harlem, with its storied river, beyond. You stand upon the brink of a mighty precipice, with the wild Kaaterskill roaring over the rocks nearly two thousand feet below, and directly opposite the majestic dome of High Peak towering to a sublime reach; and here can be met with at times the perfect realization of Ruskin's graphic lines:

> "Blue and baseless and beautiful,
> Did the boundless mountains bear
> Their folded shadows into the golden air.
> The comfortlessness of their chasms was full
> Of orient cloud and undulating mist,
> Which, where their silver cataracts kissed,
> Quivered with panting color."

At intervals along the face of High Peak, and emptying into the Clove, are several great gorges, and it is said that the central one of these, known as Buttermilk Gorge, has been pronounced by the artist Mr. Church the most beautiful thing in all the Catskills. Certainly nothing can be more inspiring, to a good mountaineer, than a climb up this wild ravine after a storm, when the water-courses are full. At the foot of the gorge there stood, until a few years ago, one or two buildings which once belonged to a deserted village that has had no Goldsmith to record in imperishable verse its humble story. The village went to decay because the supply of hemlocks on the neighboring mountains gave out, and the remains of the foundations of the old tannery, which was the *raison d'être* of the village, can still be found upon the banks of the stream.

In making the ascent of the gorge one meets with an almost continuous succession of cataracts of the most varied and exquisite beauty for over a thousand feet,

> Where through abysses vast of endless green,
> In fall on fall, from the stupendous height,
> Mid clouds of sparkling spray, with sunlight sheen,
> The foaming flood comes leaping down the wild ravine.

In one of the most picturesque of the many falls the feathery water spreads itself completely over a vast wall of rock some sixty feet high and eighty or a hundred feet in width, which is one living mass of the richest ferns and moss, and, dividing into a myriad shining streams, flows down like a shower of diamonds over its glowing emerald bed.

By the time that our excursionists returned to the hotel after their morning's expedition, which for many of them included the descent to the bottom of the enormous amphitheatre into which leap the famous Kaaterskill Falls, they were fully ready to enjoy the bountiful dinner that they found awaiting them. It is only just to say that both Mr. Paige, the manager, who opened the hotel expressly for the accommodation of the party, and Mr. Harding, who was himself present to do the honors of the house, were throughout indefatigable in their efforts to make their sojourn as pleasant as possible in every way; and the Association was glad to express its appreciation of their courtesy by a cordial vote of thanks to these gentlemen. In the afternoon the company set out upon their homeward journey, and it was with no small feeling of regret that we left the enchanted domain of the misty mountain tops to descend once more into the matter-of-fact world of everyday life.

P. B. P.

THE ASSOCIATION OF AMERICAN PHYSICIANS (Limited).

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—"Practitioner's" communication in your issue of July 3d has very pertinently directed attention to the characteristic features of the new organization styled "*The* Association of American Physicians." He justly states that a body which assumes to be composed of *the* physicians *par excellence* of America, ought to be conscious that its very assumptions make its members shining marks of criticism, and it should, therefore, be very careful that all its members are really physicians of eminent ability, skill and acquirements; and furthermore, that no men, who are physicians of acknowledged and unquestionable reputation and eminence, are excluded from the galaxy, especially to give place to lesser lights.

A superficial examination of the list of Their Eminencies united to become members of this very exclusive association, shows that while a specious attempt has been made to get specimens from the various sections of the country and the national sources, New York, Philadelphia and Boston have supplied *forty-two* of the *fifty-six* who responded to the call, while the high professional standing of the medical corps of the Army seems to have counted for nothing in the make-up of the Association by its self-appointed sponsors, although the Philadelphia progenitors must have known of the existence of such a man as Ruschenberger, who has been thought fit to preside over the College of Physicians, of Philadelphia; and the Washington begetter must have heard of the present head of the corps, Surgeon-General Francis M. Gunnell, who, during almost forty years' service, of which over twenty have been on shore, has had as wide a professional experience as half the men in the newly-fledged Association, and certainly very much more than one of them, who is represented to have declared that he is "no doctor," and has not written a prescription for twenty years. By the same token, the many years active professional work of Colonel Basil Norris, of the Army, as attending medical officer at Washington, would seem to have as eminently qualified him to represent the military service in an Association of *physicians* as the "no doctor."

One fact can not fail to impress a casual reader of the names of the seventy-four select elect, namely: that they include among them the leading "soreheads" who have foresworn their allegiance to the American Medical Association, on account of its action in revising and setting aside the arbitrary doings of its own committee—the original seven—appointed by it to arrange the preliminaries of the International Medical Congress. We might have expected the seven—or at least *five* of them—to be there, for have we not the written declaration of one of themselves that they are "the *most* eminent contributors to the advancement of medical science" in this country? [Ed. *Philadelphia Medical Times*, January 30, 1886, p. 128] and we can not help inferring a coincidence between their resentful antagonism to the American Medical Association and their part in getting up THE Association of American Physicians. Indeed, it is no secret that this Association has only been organized to complete the set of special societies out of which it is intended to create an exclusive general body aloof from the American Medical Association. Whether only the professional *crême de la crême* has been skimmed off will be open to question so long as the constituent bodies comprise surgeons who can not operate, obstetricians who have no acquaintance with parturient women, and new physicians who are "no doctors." If the death of the American Medical Association is to be accomplished, let the drugging not be attempted by such a homœopathic dose. A. M. A.

Philadelphia, Pa., July 8, 1886.

NECROLOGY.

SYLVANUS NEWELL BIXBY, M.D.

SYLVANUS NEWELL BIXBY, M.D., the eldest son of Rev. N. W. and Ruby Bixby, died at Strawberry Point, Iowa, May 10, 1886, aged nearly 42 years. He was born in Starksboro, Vt., May 16, 1844, and came to Iowa when but 3 years old. Received his education at Wasioja, Minn., and Hillsdale College, Mich. For a time he devoted his attention to teaching, and was quite successful in this capacity, and was for several years principal of the Elkader High School. He received his medical education at Rush Medical College, Chicago, and at Keokuk, Iowa. He married Miss Emily Denton, of Fitchville, Ohio, who survives him. He was a member of the County Medical Societies of Clayton and Delaware, Iowa; of the Iowa State Medical Society, and of the American Medical Association. He was a physician who was beloved and respected by all who knew him. Of genial character, sympathetic, and ready to aid whenever called upon to do so, he attracted many friends, and will in consequence be greatly missed in the community in which he labored. He was regular in his attendance upon local society meetings, and ever ready with something of interest.

The Delaware County Medical Society attended his funeral in a body, and gave expression to their esteem for the deceased in the following resolutions:

"*Resolved*, That in the death of S. N. Bixby, M.D., a member of Delaware, Clayton, and Iowa State Medical Societies, and of the American Medical Association, our Society and profession have lost a physician of skill and fidelity, an estimable Christian gentleman, and a faithful member, whose industry and high sense of honor have endeared him to his professional brethren as well as to the community, and whose example in both professional and daily life we earnestly commend to all.

"*Resolved*, That our heartfelt sympathy be tendered to the family and friends of our deceased brother.

"*Resolved*, That a copy of these resolutions be furnished to the family of the deceased, and to the local press, and that these resolutions be also spread upon the journal of the Society."

WILLIAM EDWIN JOHNSTON, M.D.

DR. WILLIAM EDWIN JOHNSTON was born near Wooster, Wayne county, Ohio, February 16, 1822. Died at Paris, France, February 14, 1886. He was the oldest son of R. C. Johnston, deceased, and was at the time of his death the oldest American physician in Paris, having practiced there for more than thirty years. He took his degree of Doctor of Medicine, at the University of New York, in 1847, after which, for five years, he practiced with his father, at Sidney, Ohio.

In 1852 he visited Paris, and established himself in the Latin Quarter to be near the schools, when he followed the most eminent physicians of the day. At the same time for pleasure and profit, he acted as foreign correspondent for a number of newspapers, and his success as a writer, made him long hesitate in reëstablishing himself in active practice as a physician. The first paper which published his letters, was the *Ohio State Journal*, of August 9, 1852. Four months later he wrote a brilliant and exhaustive description of the *coup d' etat*, which placed Louis Napoleon on the throne of France, and his subsequent correspondence with the *Ohio State Journal*, the *Cincinnati Gazette*, the *Commercial Advertiser*, and the *New York Times*, would be found to be a complete history of the third Empire from its beginning until 1868, two years before its fall.

In 1855 he became Paris correspondent for the *New York Times*, under the pseudonym of "Malakoff." His letters from Italy, over this signature rendered him famous as a war correspondent, being as distinguished for their literary merit as for their fidelity to facts; and were a noted feature of that paper, until his regular contributions ceased. Having married Miss Bertha Matteson, of Chicago, in 1866, he found it necessary to devote all his energies to the large and lucrative practice which had grown up gradually around him, in a choice circle of compatriots, and foreigners of all nations. His untiring devotion to his patients has endeared him both as a man, and as physician, to hundreds of families in all parts of the world.

During the last siege of Paris he remained in the beleaguered city, and his services in connection with

the American ambulance were acknowledged by the French Government by the decoration of Chevalier of the Legion of Honor, from which grade he was promoted officer in 1873. He also received from his Majesty the Emperor of Germany, the grade of officer in the order of the Crown of Prussia, in acknowledgement of services rendered German subjects during the siege, and throughout the two months of the Commune which followed. Dr. Johnston's literary education was obtained, not in the schools, but at the printing press, at which occupation he was engaged from the age of 10 years until his graduation in medicine. He was in the true sense of the word, a self-made man, one truly great, whom wealth and prosperity did not and could not spoil. His life was marked by constant acts of kindness and sympathy, and no unfortunate American visiting Europe, applied to him for relief, in vain.

Dr. Johnston in his political sympathies and feelings was intensely American, and he did much to mould French public opinion in favor of the Union during our civil war. His latest published work was his monograph on the Panama Canal Scheme, which so thoroughly showed the imposition practiced on the shareholders, and the impracticability of the undertaking, that the French Government ordered an investigation.

The official notification of the death of Dr. Johnston by the United States Legation at Paris to Hon. Thomas F. Bayard, Secretary of State, contains the following tribute: "In the death of Dr. Johnston the legation loses a valuable friend, one who could always be applied to for any information pertaining to his profession. During the several epidemics of cholera he furnished valuable and reliable information for the use of our Government, as the Records of the Department will show. He also interested himself in the organization of the International Bureau of Literary and Scientific Exchanges and made a report to the Department on the subject containing many valuable suggestions which were practically adopted."

The legation attended his funeral, and sent, on the occasion, to his bereaved widow, a wreath as a tribute to his cherished memory.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

INOCULATION FOR YELLOW FEVER.—The modern expedient for settling knotty points in science is to appoint a Commission; success, it is true, has not uniformly attended this method, and the reports, if not polemical, are generally colorless. Yellow fever is the disease which is now to be investigated in this way. A few years ago, Dr. Domingos Freire announced that he had prepared a vaccine which preserved the vaccinated from yellow fever; his method of experimenting, however, did not commend itself to the bacteriologists; and M. Rebourgeon, who had been trained in M. Pasteur's laboratory, was sent out to Rio de Janeiro to guide Dr. Freire into the right way. The papers since published by these two experimenters confirmed the earlier claims, and M. Rebourgeon has returned to Paris to convince the sceptics; he informed the Société de Biologie at its meeting on May 22, that, during the recent epidemic, 6,000 persons had been inoculated, of whom not one suffered from the disease; and that, in seven cases where patients were inoculated while suffering from the disease, recovery took place in every instance. The Society appointed a Commission of five, including MM. Brown-Sequard and Cornil, to study the method. In the United States, moreover, the demand for a Commission has been backed by the American Medical Association.—*British Medical Journal*, June 5, 1886.

HONORS TO PASTEUR.—The French Humane Society has recently presented a medal to M. Pasteur, in recognition of his services to humanity.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE will hold its fifty-sixth annual meeting in Birmingham on September 1st to 9th, inclusive.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 2, 1886, TO JULY 10, 1886.

Lt.-Col. Chas. Page, Surgeon, leave of absence further extended one month. (S. O. 156, A. G. O., July 8, 1886.)

Major Joseph R. Gibson, Surgeon, granted leave of absence for three months, to take effect about August 1. (S. O. 158, A. G. O., July 10, 1886.)

Major Wm. E. Waters, Surgeon, ordered for duty as Post Surgeon, Ft. Spokam, W. T. (S. O. 112, Dept. Col., July 2, 1886.)

Capt. Edwin F. Gardner, Asst. Surgeon, granted leave of absence for two months. (S. O. 158, A. G. O., July 10, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JULY 18, 1886.

Wentworth, A. R., Asst. Surgeon, detached from the U. S. S. "Brooklyn" and wait orders.

Norton, Oliver D., Asst. Surgeon, detached from the U. S. S. "Minnesota" and to the U. S. S. "Brooklyn."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDED JULY 17, 1886.

White, J. H., Asst. Surgeon, granted leave of absence for thirty days. July 12, 1886.

Pettus, W. J., Asst. Surgeon, when relieved at Charleston, S. C., to proceed to Savannah, Ga., for temporary duty.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, JULY 31, 1886. No. 5.

UNITED STATES ARMY MEDICAL DEPARTMENT

ORIGINAL ARTICLES.

DISEASES AND DEATHS OCCURRING IN THE MEDICAL SERVICE OF JOSEPH JONES, M.D., 1869–1886,[1]

IN THE CHARITY HOSPITAL OF NEW ORLEANS, LA.
WITH PRACTICAL OBSERVATIONS.

Conclusions of value may be obtained by a general review of the results of medical service extending over a series of years. The nature of such conclusions, and their relations to the practice of medicine, must evidently depend not merely upon the number of the observations, but also upon the mode in which they were recorded.

The writer has served in the Charity Hospital of New Orleans, Louisiana, from January 1, 1869, to April 1, 1870, and since that time to April 1, 1886, six months of each year, from the 1st of October to the 1st of April; and during this period, extending over eighteen years, he has kept a careful record of the names, ages, and nativity of the patients, diagnosis, and the final results of the cases treated by him in the wards of the hospital. During this period the total number of cases of disease under his care and immediate treatment was 6311, of which 668, or 10.4 per cent., terminated fatally.

The following consolidated record will form a permanent value for comparison, and for the illustration of the nature and mortality of the prevalent diseases of the delta of the Mississippi:

Tabular Statement of cases and deaths, and percentage and rate of mortality during the various periods specified in the medical service of Joseph Jones, M.D., in the Charity Hospital of New Orleans, La.:

Periods of time embraced in medical service in the Charity Hospital of New Orleans.	Total Cases Treated	Total Deaths.	Per cent. of Deaths.	Death rate per 1000.	One death in so many cases.
January 1, 1869 to April 1, 1870. 15 months					
October 1, 1870, to April 1, 1871, 6 "					
" 1871, " 1872, 6 "					
Total 27 months	1111	106	9.5	95	10.48
October 1, 1872, to April 1, 1873, 6 months	213	39	18.3	183	5.46
" 1873, " 1874, "	517	51	9.8	98	10.13
" 1874, " 1875, "	757	65	8.5	85	11.60
" 1875, " 1876, "					
" 1876, " 1877, "	437	43	9.8	98	10.16
" 1877, " 1878, "	510	58	11.3	113	8.79
" 1878, " 1879, "	283	32	11.3	113	8.87
" 1879, " 1880, "	262	29	10.8	110	9.03
" 1880, " 1881, "	516	56	10.8	108	9.21
" 1881, " 1882, "					
" 1882, " 1883, "	373	43	11.5	115	8.67
" 1883, " 1884, "	462	55	11.9	119	7.96
" 1884, " 1885, "	547	63	11.5	115	8.30
" 1885, " 1886, "	323	28	8.6	86	11.53
Total	6311	668	10 4	104	9.44

GENERAL DISEASES. MALARIAL, PAROXYSMAL, ENDEMIC, NON-CONTAGIOUS FEVERS.

	Cases.	Deaths
Intermittent fever, including quotidian, tertian and quartan,	2327	5
Remittent malarial fever,	247	7
Pernicious congestive malarial fever, including the comatose, algid, and other varieties (a large proportion of the cases were brought into the hospital in a moribund condition),	87	56
Chronic malarial poisoning (malarial toxæmia, cachexia), with various complications, as enlarged liver and spleen, contracted liver and hardened spleen, anæmia and anasarca,	212	14
Malarial hæmaturia,	12	6
Total malarial endemic non-contagious fevers,	2885	88

Per cent. of deaths in the various forms of malarial fever, 3.05; ratio of deaths in 1000 cases of the various forms of malarial fever, 30.5; one death in 32.8 cases of the various forms of malarial fever.

MICROSCOPICAL AND CHEMICAL CHANGES OF THE BLOOD IN MALARIAL FEVER.

The author has been led, by extended observations and investigations, during a period of 30 years—1855–1886—to definite conclusions, some of which may thus be formulated:

1. The phenomena of malarial fever in the human organism are due to the introduction of a morbific ferment.

2. The micro-organism concerned in the production of malarial fever attacks chiefly the best blood corpuscles of man.

3. The phenomena of malarial fever are due in part to the destruction of the colored blood corpuscles, in part to the derangement of the normal chemical changes of the blood and organs, and in part to toxic action of the chemical compound developed by, and resulting from, the action of the micro-organisms.

4. The chemical and physical changes excited in the blood and organs of the human body by the action of the malarial micro-organisms are in their highest and final results inimical to the development and multiplication of the essential potential elements of the malarial ferment.

---

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

5. The active febrile phenomena of malarial fever are, in their ultimate results and products, *antiseptic;* they tend to inhibit the development, and even to destroy the morbific ferment of malarial fever.

6. Many of the most destructive and fatal effects of the malarial ferment occur in cases in which there has been comparatively little elevation of temperature, and in which the paroxysms succeed each other in an almost imperceptible manner.

7. The recurrence of paroxysms in malarial fever is due to the *partial destruction* of the micro-organisms during the active and pronounced chemical changes of the fever. When not wholly destroyed during the febrile stage, the micro-organisms are *reproduced*, and again, at definite intervals, induce disturbances of the nervous system, alterations of the blood, and oscillations of the temperature.

8. Such agents as quinia, arsenic, and the preparations of mercury, act as poisons to the micro-organisms of malarial fever, excite an antiseptic effect upon the blood, bind the oxygen more nearly or chiefly to the hæmoglobin, and proteids, and directly promote the elimination, through the alimentary canal, the skin, and the kidneys, of the noxious products of the morbific ferment and of the increased and altered chemical actions.

9. The changes induced by the morbific malarial ferments upon the blood differ chemically and microscopically from those induced by other morbific organisms, as those of small-pox, typhoid fever, typhus fever, yellow fever, measles, scarlet fever, relapsing fever, diphtheria, Asiatic cholera, Oriental plague, tuberculosis, Oriental leprosy, pneumonia, pleuritis, carditis, erysipelas, rheumatism and pyæmia.

10. The micro-organisms which we have observed in the blood of patients suffering from malarial fever may be thus briefly enumerated:

(a). Minute globular bodies from 10,000 to 30,000 of an inch in diameter, having the general appearance and chemical features of the spores of bacteria.

(b). Globular bodies of larger size than the preceding, often of a dark opaque character, found not only in the *liquor sanguinis*, but also in the colored blood corpuscles and in the colorless blood corpuscles. These bodies, most probably true spores, appear to possess the power of invading and destroying the colored blood corpuscles. These micrococci, or spores, are often observed in the blood, in groups, surrounded by protoplasm constituting zoogloœa.

(c). Ovoid, cylindrical and rose-shaped bodies, not destroyed by acetic acid, and stained by anilin dyes. These bodies increase during the cold stage, and are also more numerous in pernicious malarial fever.

(d). Colorless blood corpuscles containing minute pigments, granules, and dark spherical bodies resembling sporules, many of them pigments, corpuscles, or aggregations of dark spherical bodies, surrounded by protoplasm, are about twice the diameter of the colorless blood corpuscles of normal blood; and their behavior under the action of reagents, and also during the process of staining, leads to the view that a portion at least of these bodies must be regarded as vegetable organisms. These large pigment cells appear to be characteristic of malarial fever.

(e). Masses of hæmatin of various forms, irregular in size and shape, but most generally the sides and portions seen in profile are angular. The deposit of dark pigment masses in the liver and in the brain, in malarial fever, and especially in cases of repeated paroxysms, finds its origin in the changes of the colored blood corpuscles induced by the morbific ferment, or micro-organisms of malarial fever.

There is an actual destruction of the colored blood corpuscles in the living blood, and within the walls of the living capillaries and blood vessels in malarial fever; and this destruction is not referable either solely or originally to the action of the bile acids accumulated in the blood as a consequence of biliary congestion or obstruction during the febrile stage of malarial fever.

We can detect the process of the disintegration of the colored blood corpuscles by the microscope, and detect the very inception of that great pathological change which constitutes one of the most distinctive features of malarial fever, and which must be carefully considered in any scientific and rational plan of treatment.

(f). Marked variations in the size of the colored blood corpuscles. These variations, from small corpuscles to what might be called giant corpuscles, twice the diameter of normal blood globules, appear to be characteristic of malarial fever.

11. *The destruction of colored blood corpuscles* does not take place with equal rapidity in all parts of the organism, but appears to be mostly marked in the spleen and liver. The blood pigment resulting from the hæmatin of the blood corpuscles is frequently observed in the blood as it circulates in the vessels and capillaries, in masses of various sizes, and in the form of cellular elements.

Without doubt local congestion may be caused by obstruction of the circulation in the capillaries by these pigment particles and cells; and such congestion may lead to local hæmorrhages. The congestions and hæmorrhages thus resulting are especially significant when occurring within the structures of the brain and spinal cord.

The appropriation of a portion of the altered coloring matter, hæmatin of the colored blood corpuscles, by the leucocytes, is due to the physical and vital endowments of these elementary bodies.

It is now generally admitted that the colorless blood corpuscles are elementary organisms, which are endowed with the power of spontaneous motion, this power belonging to them in virtue of the protoplasm of which these bodies are composed. This motion is of two kinds, consisting of change of form and change of place; the latter resulting from the former. As movements of this kind are seen in greater perfection in rhizopods and *amœbæ*, they are called *amœboid.*

The colorless corpuscles, when carefully examined in considerable numbers under high forms of the microscope, $\frac{1}{10}$ to $\frac{1}{20}$ inch objective, are seen to differ from one another both in size and aspect, and in their properties and spontaneous movements.

The careful experiments of physiologists have established the important fact that it is possible to *find the colorless blood corpuscles.* It has been demonstrated that the *colorless blood corpuscles possess the faculty of taking, by virtue of their amœboid movements, solid particles into their substance.* This subject is of great interest to the histologist, in affording him a means by which to mark individual corpuscles so as to follow them in their wanderings through the organism, and to the physiologist, in relation to the mode in which amœboid cells take in nourishment; to the student of fevers it is of transcendent importance in giving an important point of diagnosis for malarial fever, which distinguishes it from all other forms, and especially yellow fever.

The author demonstrated, during the progress of his pathological researches, extending from 1856 to 1886, the power of the colorless corpuscles of human blood to feed upon and appropriate the hæmaglobin, hæmatin, and hæmin of the colored blood corpuscles in the blood vessels of malarial patients, before physiologists had experimentally determined, by employing either finely divided fatty substances or coloring matters, the power of the colorless blood corpuscles of taking solid particles into their substance.

We have thus traced the pigmentation of the colorless blood corpuscles in malarial fever to

(a). The destruction of the colored blood corpuscles by the morbific ferment, or micro-organism of malarial fever.

(b). The coloration of the hæmaglobin, hæmin, and hæmatin, and its appropriation by the colorless blood corpuscles in virtue of their physical and vital principles and amœboid movements.

(c). The invasion of the colorless corpuscles by the colored spores of the malarial bacillus.

12. *Increase of water in the blood of malarial patients.*—Chemical analysis has shown that normal healthy human blood frequently yields 150 parts, in the 1000 parts of blood, of colored blood corpuscles in the dried *(anhydrous)* state. The dried blood corpuscles do not represent the true relations of the moist blood corpuscles to the liquor sanguinis of the living human blood as it circulates through the vessels. The number of moist (normal colored blood corpuscles) is obtained by multiplying the dried corpuscles by four. We thus obtain for healthy human blood the following composition:

1000 parts of healthy human blood contains

Moist red globules, - - - -	600
Liquor sanguinis, - - - - -	400

In prolonged or chronic malarial fever (malarial toxæmia or cachexia) the author has found the dried blood corpuscles to be reduced to 50 parts in the 1000 parts, and in some cases as low as 30 parts in the 1000 parts of blood.

If we accept the first figures, the following will represent my constitution of the blood in chronic malarial poisoning:

1000 parts of human blood in chronic malarial fever contains—

Moist red globules, - - - -	250
Liquor sanguinis, - - - - -	750

We have in the preceding changes of the blood, induced by the action of malarial poison, an explanation of the sallow, anæmic complexion, the feeble, irritable action of the heart, the depressed muscular power and mental forces, and the bloated countenance, protuberant belly, and swollen, anasarcous limbs.

13. *Diminution of the Fibrin of the Blood.*—The persistent and uniform deviation of this constituent of the blood in uncomplicated cases of malarial fever distinguishes this from the true inflammation and the fever accompanying local inflammation; and also affords an explanation of the tendency to hæmorrhages in many endemics of malarial fever.

PRACTICAL OBSERVATIONS ON THE TREATMENT OF MALARIAL (PAROXYSMAL) FEVER.

Of 2,327 cases of the various forms of intermittent fever (quotidian, tertian and quartan), only 5, or about 0.21 per cent., terminated fatally. The mortality in remittent malarial fever was greater, the deaths numbering 7 in a total of 247 cases; per cent. of mortality 2.83. One-half (50 per cent.) of the cases of malarial hæmaturia terminated fatally; and more than one-half the cases of pernicious congestive malarial fever died; or, more exactly, 56 deaths in 87 cases (64.3 per cent.). The deaths from chronic malarial cachexia were more numerous than in the intermittent and remittent fevers, but less than in the pernicious and hæmorrhagic forms; 14 deaths occurring in 212 cases, or a mortality of 6.6 per cent.

The fatal cases of intermittent fever were complicated with intercurrent diseases. It is evident from the preceding statistics, that the treatment adopted by the author yielded results corresponding with the nature, severity, preceding duration and effects of the various types or varieties of the malarial diseases.

In an effort to formulate the general plan of treatment pursued in these cases, it is evident that the remedies were necessarily adapted to the natural progress and history and visceral complications of each class and condition of the malarious manifestations; and for purposes of clearness and precision and brevity we will present the practical results under the following heads:

1. ACUTE STHENIC, INTERMITTENT AND REMITTENT FEVER, OCCURRING FOR THE FIRST TIME IN HEALTHY INDIVIDUALS.

Numerous cases have come under my observation of treatment of natives of Europe and of the healthy non-malarial districts of the United States of America, who have been attacked by the various forms of intermittent and remittent fever for the first time in the history of their lives. Thus I have seen entire crews of Northern sailors stricken with intermittent and remittent fever shortly after their arrival in the Southern rivers bordered by extensive swamps and marshes.

Natives of Ireland, France, Germany, Italy, Spain and England, who work for the first time upon the railroads and in the swamps, rice-fields and marshes of Georgia, South Carolina, Alabama, Lousiana, Mississippi, Arkansas and Texas, are subject to the most

violent forms of intermittent and remittent fevers in the months of July, August, September and October. Such cases, if imperfectly treated or abandoned to the powers of nature, either perish in the acute stages of the malarious disease, or suffer repeated attacks of chills and fever, and during the repeated congestions of the internal organs, add the oft recurring cold and hot stages, are gradually reduced to a most distressing and dangerous condition. The repeated and prolonged action of the malarial poison induces destruction of the colored blood corpuscles, anæmia, hepatic and splenitic enlargements and indurations, aberration, nervous phenomena, neuralgias, muscular prostration, and general anasarca.

Whilst it may be true that a certain percentage of cases of intermittent fever in comparatively healthy localities, especially when the individual moves out of the malarial region in which the disease has been contracted into a non-malarious district, may recover spontaneously without the exhibition of quinine, or any other remedy. This statement does not apply to the swamps, marshes and rice-fields of our Southern States. In these low, moist, malarious districts, the poison of malarial fever is ever present, and while it may slumber and hibernate during the coldest weather of the year, it returns in the spring time, with the vegetation, and attains its maximum intensity in the months of July, August, September and October.

If this disease be often self-limited in its character, and terminates in health either from the elimination of its cause, or the exhaustion of susceptibility to its action, or from the "*curative powers* of nature," such favorable termination is only possible in healthy non-malarious localities, and appears to be wellnigh impossible in such regions as the swamps, marshes and rice-fields of our Southern States.

Many cases of intermittent and remittent fever which appear at the outset to be devoid of danger, frequently assume without warning highly dangerous characters. It is, therefore, manifestly impossible to predict at the commencement of an attack what its subsequent symptoms, course and termination may be. In this disease, in which the virtues of quinine as an *antipyretic* and *anti-paroxysmal* and *antiseptic* remedy, are well established, there is no excuse for delay and indecision; "*to wait for a remission*" may be "*equivalent to the loss of a patient*," and has been justly termed "*a meditation on death.*"

Holding these views, the author has used purgatives and quinine at the onset of the disease, and continues the use of quinine in full doses, regardless of the stage of remission or intermission, or febrile excitement. Whilst unloading the portal circle, and relieving the congestion of the brain, liver and spleen by mercurials, quinine also has been simultaneously administered. Thus 10 grains carb. of calomel and sulphate of quiniæ, followed in four hours by one fluid ounce of castor oil and from 5 to 10 gr. of quinine, administered promptly in the onset of intermittent and remittent fever, not only causes free evacuations of the bowels, but also arrests the fever, and places the system in the proper condition for the subsequent action of quinine. Quinine was then administered in doses of 5 or 10 grains, until from 15 to 40 grains were administered during the twenty-four hours.

After the complete subsidence of the fever, quinine is not abandoned, but administered, from 10 to 20 grains each day, for at least one week after the fever; and subsequently from 5 to 10 grains each day, for at least ten days longer; and where the patient is compelled to remain in the malarious atmosphere exhaled from swamps, marshes or rice-fields, he was advised to use quinine as a prophylactic, often combined with iron and arsenic during the months of September and October.

In those cases in which the stomach was too irritable to retain the quinine, it was used externally or by enema. For external administration the following formula has been found to be useful:

℞. Quin. sulph..... ℥i.
Linam. saponis.....
Olei olivæ. ..... aa f℥iij.
S. Use as a liniment under armpits (axillæ), on the inner surface of thighs, on the abdomen and spine, every two, three, or four hours.

This liniment is efficient also in the treatment of malarial fever occurring in children, who take quinine by the mouth with great reluctance.

When quinine is administered to the adult as an anti-malarious remedy in intermittent and remittent fever, neuralgia, brow-ague, and in cases of rheumatism, pneumonia and pleuritis resulting from cold, damp and marsh air, and which show a periodic or intermittent character, it should be given *alone*, and in large doses at regular intervals;—thus, beginning with 10 grains, followed by the same or half this quantity (5 grains) every four hours, until the frequency of the pulse is lowered, the fever heat is diminished, and the ears ring. Sugar-coated quinine pills as furnished "by the wholesale" from the manufacturing druggists and chemists, should be universally abandoned by the medical profession in malarial regions, because their insolubility renders them incapable of rapid assimilation by the enfeebled and irritated stomach. The use of these and other manufactured pills often causes the loss of precious time, frequently deceives both physician and patient, and ensures a fatal result when recovery should have been certain, if *quinine* and *quinine alone* had been administered by the mouth or rectum, or by subcutaneous injection. I have seen these sugar-coated quinine pills, and the so-called quinine capsules, pass through the bowels in intermittent and remittent fever unchanged with the discharges of the bowels. When the bowels are in active motion and the doctor is pouring in his "elegant commercial manufactured sugar-coated and gelatine embalmed quinine pills," they may sometimes be heard falling upon the bottom of the chamber rattling like buckshot or dried pease.

In all serious cases of malarious disease, where the object of the physician is to produce a prompt and decided impression, *quinine is best given alone;* each dose may be stirred in a wineglassful of pure water or wrapped up in moistened wafer paper (to be had of any pastry-cook) and swallowed as a bolus. Pills

of the bisulphate of quininia, which may be prepared extemporaneously, with dilute aromatic sulphuric acid, may be used in some cases with benefit, but it sometimes occurs that this form of the sulphate is too irrritating to the gastric mucous membrane. In like manner the solution of the quinine in water by the aid of citric or sulphuric acid may prove useful, provided the acid solutions do not irritate the stomach.

As a general rule, I have not employed digitalis, aconite, veratrum viride and gelsemium in intermittent and remittent fever, but trusted chiefly to the sulphate of quinia. In like manner, opium, hydrate of chloral, morphia, belladonna, hyoscyamus and the bromides, were used as adjuvants to quinine when necessary. Without doubt digitalis, veratrum, gelsemium, opium and its preparations, chloral hydrate, chloroform and bromide of potassium may be indicated in certain cases, and I have used one and all of these drugs to fulfil certain indications, but I have never lost sight of the fact that *quinine* was the great agent for the arrest and cure of the paroxysmal fevers. Chloroform used in large doses to arrest or abort the cold stage has, according to my experience, proved destructive to life, when administered by others. I regard the practice of giving large doses of either chloroform or tincture of digitalis in the cold stage of malarial fever as dangerous. Salicine, salicylic acid and salicylate of soda have proved useful in the treatment of the various forms of fever, and especially in rheumatic fever, as depressors of temperature, and even as cathartic agents in malarious fevers, but these remedies have never, in my hands, equalled or superseded the sulphate of quinia.

2. INTERMITTENT FEVER OF LONG STANDING.

The prolonged action of the malarial poison will often cause congestion of the internal organs, induces profound alterations in the blood, and structural changes in the liver and spleen. The frequent occurrence of *interstitial hepatitis* and jaundice, as well as irregular action of the heart, debility of the capillary circulation and general anasarca, characterize the chronic stages of malarial fever. The indications for treatment are:

1. To arrest the paroxysms.
2. The regulation of the hepatic and renal secretions.
3. The restoration of the impoverished and watery blood to its normal condition.
4. The improvement of digestion and assimilation, and the restoration of the nervous and muscular forces.

To accomplish the first indication, quinine and arsenic are most reliable agents. The latter should be administered in such doses as not to irritate the stomach. Comparatively small doses of arsenious acid, administered at regular intervals, often accomplish great good in obstinate, protracted cases of malarial fever. I have freely used Fowler's solution of arsenic in doses varying from 6 to 12 drops, every four, six or eight hours. Ten drops of Fowler's solution, given one hour after each meal, has been beneficial in protracted intermittent fever, marsh cachexia; and especially when the tincture of iron was administered (properly diluted) in similar doses, one hour before each meal, in order to fulfil the third indication. Quinine was also administered in these chronic cases, according to the indications, in from 3 to 6 grains three times a day. The quinine was frequently added to and administered with the solution of the tincture of iron.

During convalescence, infusions of Virginia snake-root (aristolochia serpentaria) and of quassia were used, with the result of improving digestion and increasing the muscular force. Nux vomica (in powder, extract or tincture), and solutions of strychnia, proved of permanent benefit in protracted cases, especially when administered in conjunction with tincture of iron and the mineral acids.

In hepatic derangements caused by the action of the malarial poison, nitro-muriatic acid, administered internally, and applied externally in the form of the footbath, or used locally over the region of the liver, possesses great value. The tincture of iron, as well as the nitro-muriatic acid, possesses the power of giving tone and power to the muscles, and especially to the muscular fibres of the heart—a remedy of great importance in the anæmic state induced by the action of the malarial poison.

Although apparently not reduced in flesh; but, on the contrary, with bloated and swollen countenances and limbs, the miserable anæmic, sallow victims of the prolonged action of the malarial poison suffer from a feeble cardiac action, often accompanied with a murmur; they are incapable of prolonged muscular effort, panting for breath upon the slightest exertion, and suffering with violent palpitation of the heart, dizziness and imperfect vision. The distress is often very great when such patients attempt to ascend the stairs; the heart beats tumultuously, the "head swims," and the trembling patient sinks down exhausted—overwhelmed by muscular and nervous weakness, and irregular action of the circulatory and respiratory apparatus. Both the cerebro-spinal and the ganglionic (sympathetic) systems are depressed in their action and deranged in their functions; and the ganglia of the heart are necessarily deeply affected by virtue of their increased activity in sickness as well as in health; and the muscular fibres of the heart, supplied with anæmic blood, containing the micro-organisms of malarial fever and the noxious results of their chemical actions, necessarily manifest feeble and spasmodic actions.

Under the judicious and persevering use of quinine, iron, arsenic, strychnine, and the tribasic phosphate of iron and lime, these distressing symptoms gradually pass off; the patient loses the local cardiac murmur, the action of the heart becomes slow, regular and vigorous, the cerebro-spinal and sympathetic systems regain their tone and vigor, the intellect is again able to perform its functions, the liver secretes normal bile, the blood regains its lost colored corpuscles, the surface of the face and body resumes its healthy appearance, and the patient is able to resume his normal occupation.

It is well known that neuralgia of a strictly periodical character often prevails in the same localities and seasons, preceding alternately with and succeed-

ing to periodical fevers, exhibits the same types and phenomena of intermission and remission. Periodic neuralgia is therefore produced by the same morbific ferment as intermittent and remittent fevers, and yields most readily and surely to the same general plan of treatment. In this painful and most distressing manifestation of the malarial disease our reliance must be in the free administration of quinia, often combined with opium, morphia, hydrate of chloral, belladonna, and hyosciamus. One-fourth of a grain of morphia with gr. $\frac{1}{150}$ to $\frac{1}{75}$ of atropia, injected subcutaneously, has proved beneficial. Morphia and the preparation of opium should be used with caution by the physician in obstinate cases of neuralgia, in order that the "*opium habit*" may be avoided.

3. PERNICIOUS OR CONGESTIVE MALARIAL FEVER.

In the algid form characterized by rapid, feeble pulse, cold extremities, and prostration of the nervous and muscular forces, when the intellect is clear, the main indications are

1. To bring the patient under the influence of quinine at the earliest practicable moment.

2. To restore the general and capillary circulations, and invigorate and support the action of the heart by the judicious administration of diffusible stimulants and by the external application of sinapisms and heat.

In cases characterized by coma, blisters should be promptly applied to the back of the head and neck, and on the epigastrium, and if the bowels are not loose, a full dose of calomel should be administered by the mouth. Notwithstanding the profound coma which characterizes this class of cases, pressure over the region of the stomach and loin will almost always elicit groans, cries and signs of distress from the patient. The author has been led, by the results of his extended experience in civil and military practice, to regard the prompt application of a large blister, six by six inches, or eight by eight inches, over the region of the stomach and loin, as a measure of great value, which may, in some instances, be the means of preserving life.

The use of such agents as chloroform, digitalis, aconite and veratrum viride in the pernicious forms of malarial fever, according to the experience of the author, is attended with great danger. The injudicious use of chloroform and of tincture of digitalis has, in some cases, caused death by depressing still further the feeble nervous cardiac powers.

The large proportion of the so-called *congestive* cases have been the victims of the prolonged action of the malarial poisons before the sudden development of the dangerous *(pernicious)* symptoms, and manifest the profound action of the malarial poison in the sallow, anæmic, jaundiced countenance, and enlarged liver and spleen. In fatal cases the cortical substance of the brain is frequently found of a dark, almost chocolate color, from the deposition of pigment granules and pigment cells within and around the cerebral capillaries, the pigmentation being most marked in the gray substance of the cerebrum and cerebellum. The enlarged liver presents marks of interstitial hepatitis, with deposits of blood and biliary pigments in the capillary net-work of the lobules. The enlarged spleen resembles a bag of soft, dark, purplish-black mud, and has so little consistency that it can with difficulty be removed without rupture of its capsules and trabeculæ. This black splenic mud contains, in addition to the other constituents of the blood, numerous pigment particles and pigment-cells.

The hopeless character of many of such cases is fully revealed by the results of post-mortem examinations, and the tedious character and slow progress of those which recover is in like manner rendered evident.

If the physician succeeds in arousing his patient from the "*fatal*" paroxysm, his subsequent efforts to restore the blood and organs to their normal condition must be based upon his knowledge of the characteristic lesions of malarial fever, and the therapeutic value and application of quinine, arsenic, and iron. Change of climate is of great importance in the after-treatment of the pernicious forms of malarial fever, but few patients have the necessary means to enable them to make the change of locality and climate.

4. HÆMORRHAGIC MALARIAL FEVER; MALARIAL HÆMATURIA.

Hæmorrhagic malarial fevers prevail in certain seasons and in certain localities, and appear to be aggravated by the dangerous system of *rice culture.* The year 1880 was characterized by the prevalence of severe forms of malarial fever, often attended with hæmorrhage from the stomach, bowels and kidneys. This hæmorrhagic malarial fever prevailed in greatest severity in all those portions of the Delta of the Mississippi in which rice was cultivated, namely, from the mouth of the Mississippi to the hills of North Louisiana and Tennessee. Those cases which came under the immediate observation of the author, in 1880, presented all the symptoms and characteristic lesions of chronic malarial toxæmia, various degrees of hepatic derangement and jaundice, profound anæmia, sudden remissions and intermissions. Beyond a tendency to passive hæmorrhages, these cases presented nothing in common with yellow fever. Even under the most energetic and judicious use of such remedies as quinine, tincture of iron, and fluid extract of ergot, the results were unsatisfactory and uncertain, and a large proportion of the cases terminated fatally.

Fortunately, hæmorrhage from the kidneys is of comparatively rare occurrence during the progress of malarial fever in many portions of our Southern and South-western States; and the form of malarious disease called *malarial hæmaturia*, is comparatively rare in New Orleans. If the kidneys suffered equally with the liver and spleen in the periodic congestions of the various forms of malarial fever, this would prove to be an almost universally fatal disease.

The results of treatment in malarial hæmaturia will depend largely upon the extent and character of the lesions of the kidneys.

When these organs are profoundly involved, and hæmorrhage occurs extensively into the Malpighian capsules and fubrili uiiriferi, the function of these

organs is necessarily greatly impaired, and often completely arrested, and the patient dies from uræmic poisonings and in convulsions. In most cases of malarial hæmaturia, the physician has to deal with the profound lesions of the blood, nervous system, liver and spleen, induced by the preceding prolonged action of the malarial poison; it is therefore not to be wondered at that many and very diverse plans of treatment have been recommended in this most dangerous and fatal form of disease.

No specific rules can be laid down to meet the indications of each and every case; many are so slight as scarcely to be ranked with malarial hæmaturia, and recover under the most mild measures; whilst in others the lesions preceding and attending the attacks are so grave as to preclude all hope from any plan of treatment now known to the medical profession. In those cases in which the author has been able to institute chemical analyses of the blood, the fibrin has been increased to a marked degree, and in every case he has found derangements of the hepatic functions and secretions.

Benefit has been derived in some cases by combining small doses of calomel with full doses of the sulphate of quinine. The fluid extract of ergot and the tincture of iron have accomplished good in some cases. When the patient vomits incessantly large quantities of green and blue bile, and at the same time is affected with profuse discharges (sometimes bloody) from the bowels, quinine, calomel and other remedies can be administered neither by the mouth nor rectum, and the physician must resort to inunction, and to subcutaneous injections. Quinia, morphine, and minute quantities of atropia, also the fluid extract of ergot, have been administered hypodermically with benefit.

(To be concluded.)

ON THE USE OF SO-CALLED ANTIPYRETIC DOSES OF QUINIA IN TYPHOID PNUEMONIA.[1]

BY O. T. SCHULTZ, M.D.,

OF MT. VERNON, IND.

The practice of administering large doses of quinia in pneumonia, which originated in the German antipyretic school of therapeutists, and was recommended by them as a substitute for, or rather as an auxiliary to, the cold bath, does not seem to have found much favor with the American physicians; for referring to latest authors only, we find it not at all mentioned by Davis in his book on "Practice," and very inadequately mentioned by Loomis in Pepper's "System of Medicine." And yet quinia in large, so called antipyretic, doses, properly administered, is a very careful and a very valuable therapeutic measure in the treatment of pneumonia, and more especially of its typhoid form, and merits more confidence than has been hitherto bestowed upon it, not, however, it would seem to me, on account of its power to reduce the temperature, to which Loomis and the Germans would limit its beneficial action in pneumonia, but on account of some power *sui generis* which quinia seems to exert on the diseased process of low essential fevers.

It shall be my aim to show to-day, 1st, what effects accompany the methodical exhibition of so-called antipyretic doses of quinia to cases of typhoid pneumonia, and, 2d, what precautionary rules must be observed in administering such doses.

Before entering upon the subject at all it will be necessary for me to briefly define my position on certain mooted points that have a bearing on the question at issue, such as to the action of typhoid pneumonia, as to the relation of malaria to the pneumonias that occur in our region of country, and as to the manner in which quinia benefits essential fevers that have a marked tendency to asthenia. I will first state that Mt. Vernon is a small country country town near the confluence of the Ohio and Wabash rivers, and that my practice largely lies in the "bottoms" of these rivers, and among farmers more or less exposed to the vicissitudes of a country that is being more opened up and brought under cultivation. Also that from May, 1875, to May, 1886, I have had under observation 238 cases of croupous pneumonia, but few of which presented the sthenic type, and that owing, as I claim, to the course of treatment pursued, I have had the low mortality of 6.50 per cent. Further, that in addition to the quinia administered according to the rules presently to be given, my typhoid pneumonia cases received phosphide of zinc as soon as the symptoms took on the "typhoid" character, and that camphor, or in advanced stages, digitalis and camphor, were resorted to as soon as signs of cardiac failure began to appear.

As to the action of "typhoid" pneumonia, increased opportunities of observation force me to still maintain the opinion expressed by me in a paper entitled "Observations on Pneumonia," *American Practitioner*, August and September, 1879, p. 94, *et. seq.*, that this form of pneumonia is not a distinct entity of disease, nor due to a potential causative principle, but "that it is a croupous pneumonia, that in our enfeebled constitution runs an adynamic course;" and that "gives a cause sufficient to produce a croupous pneumonia of moderate severity and the constitutions, such as the far larger portion of our patients present, and the disease must necessarily run a *typhoid* course."

My position as to the complication of malaria with pneumonia is expressed in the same paper, p. 97, in the following words: "The complication with malaria manifested itself in the same way and pursued the same course as when malaria is superadded to any other disease; and as little as we would be justified on this account of speaking of a miasmatic bronchitis or a miasmatic pertussis, would it be proper to call this even miasmatic pneumonia with Wood and Da Costa." I would add that except in cases in which a direct complication of the two diseases was present, when the exacerbations of the fever at the time of the ague paroxysms, with the consequent enormous increase in all subjective symptoms might well give color to the invention, by inaccurate ob-

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

servers, of the myth of an intermittent or remittent pneumonia, with the imagined disappearance of all *objective* symptoms of the disease in the intervals between the paroxysms, *malaria showed its influence only in its vitiating effects upon the constitution of my patients, in weakening their powers of resistance and invaliding important organs.* Judging by what I have seen of "bilious" pneumonia, this variety of pneumonia, which also is claimed to be brought about by a complication of pneumonia with malaria, has no more right to independent existence than intermittent or remittent pneumonia. Extension of the gastric catarrh to the duodema and to the bile ducts frequently enough gave rise to the so-called "bilious" symptoms; a mild degree of icteros was also usually present, and in a few cases there was marked jaundice, but in no case could these symptoms be set down as due to malarial infection.

How quinia accomplishes good results in the treatment of typhoid pneumonia has not as yet been determined. I opine that it is not by its fever lowering property, for I have seen the general condition of my patients improved even when no impression was made on the temperature; and then, the pyrexia of our typhoid pneumonia is rarely very high, the temperature but rarely exceeding 103°, and varying usually from 101° to 103°. I have never seen a temperature above 105°, and a range from 103° to 105° was found in but a few cases during a year's practice. Yet notwithstanding this low grade of fever, our typhoid pneumonia is a very *fatal* disease, and quinia given in large—antipyretic—doses may not reduce the morning temperature at all and yet very favorably influence for good the course of the disease. There seems to be inherent in quinia, when given in large doses, a specific power of so influencing diseases attended with great and rapid tissue metamorphosis, and retention of the waste products of such tissue changes in the system, that these diseases take on a more favorable course and come to a more happy issue under its use. The same conclusion seems to apply to pneumonia that I draw for typhoid fever. "It would seem that quinia neutralizes in the system or discharges therefrom the causes or the products of the typhoid fever poison, and that its influence is not limited to the time the drug remains in the body, but continues until these causes of typhoid fever, or the waste products of the same, have been removed or have reaccumulated." (*American Practitioner*, November, 1885, p. 287.) The influence of quinia on the temperature is in these fevers a matter of secondary importance; moreover, its antipyretic action seems to be an outcome of its specific power, for it is greatest and most searching in those fevers in which tissue metamorphosis forms an important factor in the maintainance of a high degree of pyrexia, while it is far less outspoken in those diseases in which fever seems to be due more to an exaltation of the nerve centres.

But if quinia has this specific action on essential fevers with adynamic tendencies, and the reduction of the temperature is but one of the manifestations of this virtue, the indication for the employment of this remedy in these fevers must not be sought in the pyrexia with which they are attended, but in the nature of the disease itself, and the quinia must be administered in such a manner as to best obtain its its fullest specific influence, be the fever a pyrexia of a high or a low grade. This is accomplished by giving the drug in a *form* in which it is most rapidly and most completely absorbed; in a *quantity* that will insure its full physiological effects; at a *time* when the height of its action will tally with the normal diurnal declension of disease; and in a *frequency* that a new dose is introduced as soon as the beneficial effects of the previous one have become exhausted. This method I have followed out for over ten years in typhoid pneumonia, and since 1881 in typhoid fever, and its advantages in the treatment of the latter I have endeavored to show in my paper, "Has Quinia a Specific Action on the Diseased Process of Typhoid Fever?" (*American Practitioner*, November, 1885.)

The method pursued by me, and the objects I seek to accomplish by this methodical use of quinia in these fevers, appear to be identical with the course followed out and the ends striven for by Pecholior in typhoid fever, as reported by Charcot to the French Academy of Sciences (vid. *Therapeutic Gazette*, November, 1885, p. 770).

1. What effects attend the methodical administration of large doses of quinia in typhoid pneumonia? I shall discuss this question under the following heads: 1, the effect of quinine on the temperature; 2, on the heart; 3, on the lungs; 4, on the course and the termination of the disease.

The Effect of Quinia on the Temperature.—A dose of quinia given in the evening will usually cause reduction of the morning temperature of 2° to 5°, the temperature beginning to fall within an hour after the taking of the quinia and continuing to decline for a number of hours, the fall being attended with a profuse sweat or not, and accompanied with more or less signs of prostration, which at times amount to partial collapse. In a certain number of cases the morning temperature is as high as it was before quinia was given. It is impossible to foretell in which cases the temperature will not be reduced; the fever may be of a high or of a low grade, and the disease in its earlier or later stages. The cases in which this occurs are not numerous, but they always prove obstinate and dangerous. During the day following the administration of quinia the temperature again gradually rises, and either by night or, in more favorable cases, by the evening following, the temperature is as high or higher than it was when the quinia was given.

The impression which quinia produces on the temperature is more pronounced during the latter than during the earlier part of the disease, and even in cases that terminate fatally the temperature is still greatly influenced by the quinia during the latter half of the pneumonia, but its action is more evanescent, a higher temperature replacing the lower more quickly. Defervescence may follow any of the doses of quinia, the temperature either falling to the normal and not again rising within a few hours, or the declension not being so great, and the fever again

rising to less than the former height by the next evening, and then gradually and steadily falling to the normal within the next twenty-four or forty-eight hours. A profuse perspiration usually accompanies the falling of the temperature. It may, however, be absent, or only a slight moisture may be present, even when the morning temperature is greatly lowered. The sweat is more often absent or but slight during the earlier days of the disease, while during the latter days it is rarely absent, and a profuse drenching and offensive flow usually occurs after every dose. These sweats seem to be of favorable import; the patient's condition is better in the morning when the sweat has taken place, even when the temperature is not much reduced; besides, the absorption of the exuded nausea seem to take place more rapidly when the sweats are profuse.

The Effect of Quinia on the Heart.—After an evening dose of quinia the pulse in the morning is stronger, fuller, slower by ten to thirty beats, more regular, if dicrotism or intermissions were present, these have disappeared; the heart's action is prompter, stronger, more distinct, the valves close more sharply and more completely. This improvement is independent of any effect on the temperature, for I have repeatedly observed it, where the temperature would have remained entirely unaffected by the quinia. There comes a time in severe cases of pneumonia, when the heart's impulse is imperceptible to the eye or touch, when its area is enlarged, the action is indecisive, without power, hesitating, the beats are unequal in form and as time progresses become unequal also in time and rhythm and intermittent; the sounds are widely diffused, it is impossible to locate them, they are indistinct, muffled and accompanied with a blowing sound. The pulse with this condition of the heart is empty, hesitating, barely perceptible, some beats fail to reach the finger. This condition of imminent heart paralysis is not brought about by the high temperature alone, for I have seen it in cases that have never registered more than 103° and that only for a few evenings, but is due to an innate weakness of the cardiac muscle in persons broken down by previous disease, bad nourishment, exposure, imtemperance, overwork and old age. If a large dose of quinia be administered in the evening and care be taken to guard the feeble heart against the early depressing effects of the remedy, the heart's action becomes steady, strong, and more effective, a load seems to be removed from the heart. This effect may be obtained time and again in the same case, until either the improvement becomes permanent with established resolution and defervescence, or else the symptoms of cardiac exhaustion become more and more pronounced after each temporary improvement and finally culminate in paralysis. I have learned to regard one behavior of the pulse with great apprehension, and as an indication for an early beginning of the quinia treatment. In many cases, which show all signs of the adynamic and the local symptoms of "typhoid" pneumonia, the pulse with a temperature of 103 and over remains remarkably slow, 80 to 100, for so severe a disease, and for the amount of prostration that is present, it is thus hard, strong, regular, equal, some cases show dicrotism, in others this is absent, suddenly the heart breaks down without any increase in the fever, sometimes early in the course of the disease, but more usually by the fifth or sixth day. These cases are hard to rally, the signs of cardiac exhaustion once being established; the heart can by constant spurring, be made to perform its work moderately well for three or even four days, but at last it fails. I have seen such cases in the old as well as the young.

When the temperature of the fever has been reduced to nearly normal by a large dose of quinia, the pulse is usually also reduced to 80 or 88, though sometimes it remains more frequent. It differs, however, greatly from the soft, compressible pulse of final defervescence, the pulse of the quinia apyrexia being hard and sharp. It retains this character for some hours, and then becoms soft and frequent, several hours before the thermometer in the axilla will detect any increase in the fever. As the temperature ascends to its former height, the pulse resumes the character which it had before the quinia was given.

The Effect of Quinia on the Lungs.—The frequency of the respirations is somewhat diminished after a dose of quinia; not, however, in equal proportion with the frequency of the pulse. Thus, while the pulse-beat may be reduced to 80–88, the respirations may still register 28–32. Quinia does not prevent hyperæmia of the lungs, nor does it hinder hepatization from taking place, as new lobes will be invaded during the course of pneumonia even when the system is fully cinchonized. Thus in a boy of 20, in whom a lower right pneumonia was recognized on the second day, and who was taking quinia gr. 10 at 6, 9 and 12 o'clock on the third and fourth days, because a chill coming on at 4 P.M. of each day made me suspect malarial complication, hyperæmia and congestion were made out in the lower left lung in the afternoon of the fourth day, and hepatization was completed by the fifth day. And in a man, æt. 44, in whom a lower left pneumonia was discovered on the first day, and quinia gr. 10 was given at 6 P.M. and at 6 A.M. of the third day, because a chilly sensation would occur every morning, infiltration of the middle right lung was made out on the third day, two hours after the last dose of quinia had been given, the temperature at this time being 99, and the patient being in a violent chill. I have several similar cases on record.

Quinia does not hasten resolution, but it seems to stimulate absorption when once resolution has set in. In cases in which a new lobe would be involved in the course of the pneumonia, the lobe originally affected may clear up and become resonant within a few days. I have seen this when the expectoration would hardly amount to a tablespoonful during the twenty-four hours, and when the case would eventually terminate fatally.

Quinia retards the development of œdema, and even causes the retrocession of its milder grades. It has, however, no influence over fully developed and far advanced œdema. On the contrary, it seems that during the stage of depression that primarily follows the quinia, notwithstanding the most careful husband-

ing of the patient's vital powers, œdema may develop to such a degree that the lungs are overwhelmed thereby.

The Effect of Quinia on the General Condition of the Patient.—The patient's general condition is greatly improved by the quinia. The dry tongue becomes soft, the sordes disappear, the mind becomes clear, delirium vanishes, and even when the disease is destined to terminate fatally, and exhaustion is immense, a partial stupor is the only brain symptom present during the period of improvement that follows after the evening dose of quinia. The bowels give no trouble. The passages rapidly diminish in frequency; thus, in a case seen a few days ago, there were twelve stools per diem before quinia was given. After the administration of quinia gr. xxx the number was reduced to four, and after the next dose to two, at which they remained until convalescence was established. The patients hold their strength better, are able to help themselves, retain perfect control over bowels and bladder, and while under the influence of the quinia do not present much evidence of the gravity of their condition.

The Effect of Quinia on the Course and Termination of the Disease.—Since my typhoid pneumonia cases are always treated with phosphide of zinc and the large doses of quinia, it is not difficult to determine the influence of quinia on the course and the termination of the disease. This form of pneumonia pursues, under the treatment adopted by me, a very mild course; severe brain and bowel symptoms are absent; the heart is protected, and when it flags can usually be spurred on to pursue its work efficiently; œdema sets in late, its milder grades are recovered from, and death in the severer grades is pushed out many days; the pneumonic exudate pursues its normal course to perfect resolution—purulent infiltration I have met with but a very few times; the patient's strength is preserved remarkably well, and he needs less careful and less intelligent nursing; his convalescence is rapid and complete; the mortality is greatly reduced.

I cannot say whether the *duration* of the disease is shortened or not. Typhoid pneumonia is at the best a tedious disease, resolution rarely or never occurring before the eighth or ninth day. At times, we confidently look for resolution from day to day, but it fails to come on, the treatment serving merely, it seems, to keep the vital machinery in motion, but not powerful enough to spur it on to bringing the disease to a close; or if resolution does occur at this time, the bronchi are overcrowded with loosened exudations, which there is no cough to expel. Such cases clearly prove that quinia exerts no power over the *local* manifestation of pneumonia; but that, as in typhoid fever, it moderates the *systemic* disease and protects the organism against its ravages.

What Rules must be Observed in Administering Quinia in Typhoid Pneumonia?—In order to obtain good results from quinia in typhoid pneumonia certain principles must be carefully observed in the administration of the remedy: Quinia must be resorted to *early* in the course of the disease, as soon as the "typhoid" character of the pneumonia becomes apparent. The *disease itself* constitutes the indication for the exhibition of the drug, and the indication is modified by excessive temperature and by an early failing of the heart, only in so far as these furnish extra grounds for the giving of more frequent and larger doses.

An ordinary pneumonia, that shows no typhoid symptoms, without an excessive temperature demands no quinia at all; although, knowing how suddenly and how usually a change into an asthenic condition occurs in the cases that I have to treat, I make it a point to begin giving large doses of quinia regularly by the *fifth* day to these cases also.

If the disease shows adynamic symptoms from the first, or runs along with a temperature above 103, or in individuals in whom I anticipate early cardiac exhaustion, quinia is given as soon as the pneumonia is recognized. The quinia should be given in one large dose, gr. xv, xxx or more, in solution with muriatic acid, at about 7 o'clock in the evening. This dose should be given *every* evening if the evening temperature range 102° or over, or if with a lower temperature the heart is very weak. It should be administered *every other* evening if the patient's condition is good, the temperature of low grade, and the heart's action steady.

This course is to be kept up until the evening temperature is normal, defervescence having taken place, or until it shows by a steady fall from evening to evening that the disease is about to terminate by lysis.

The *size* of the dose, the *manner* of giving the quinia and the *time* when it must be given, are of the utmost importance. It is surprising that at the present time practitioners should continue to administer 1, 2 and 3 grains of quinia every two or three hours in malarial fevers, and then complain that they must resort to iodine, carbolic acid, etc., in order to relieve these patients. Equally astonishing is it to find at this day, when pharmacological record and a mass of clinical experience have settled certain questions with regard to quinia beyond a doubt, physicians exhibiting quinia in 2, 3 or 5-grain doses every three or four hours in pneumonia from the beginning, and then hear them announce that they derive no benefit from this drug, or attribute fancied advantages to the remedy that are plainly due either to accident or to the line of treatment pursued side by side with the quinia. The dose of quinia must be *large*, *very large*, and given at *one* time, to insure the full physiological effects of the drug, and it must be administered not in a capsule or in a weak solution, but in an *acid solution*, so that its rapid absorption may be made certain. As to the *time*, the normal deviation of the body heat must be borne in mind, and the dose given at an hour when its effect will aid the powers of nature to lower the fever. The natural tendency is to a lower morning temperature, and this tendency must be taken advantage of and the normal morning downfall must be emphasized by a large dose of quinia given in the evening.

The prostration that follows shortly upon taking the quinia must be guarded against. It may be very great and almost amount to collapse, and during its

presence the dreaded œdema may establish itself, or if previously present may be fatally increased. It is always a momentous question with me to weigh in a case of far advanced cardiac enfeeblement the indefinite resisting power of the heart, against the equally indefinite results of the dose of quinia I think necessary to administer to my patient. If, however, I have made mistakes in deciding this question, it has so far always been in underestimating the vital powers of my patient, and overestimating the injurious effects of the medicine. For when I review my fatal cases, it is always for withholding the quinia, or giving it in inadequate doses at the critical time, that I have to blame myself.

The precautions against a dangerous prostration of the vital powers from the quinia vary with the greater or less feeble condition of the patient's heart. If the heart's action is good, regular and equal, no special guard is necessary. But if there is inequality as to force, time or rhythm with an empty pulse present, the dose of quinia should be preceded for a quarter of an hour by two or three tablespoonsful of old whisky or brandy taken next and followed as soon as great perspiration and a sinking of the strength becomes manifest, by three to five grain doses of camphor repeated hourly until the danger is over. In cases in which heart failure is fast developing with the symptoms of dilatation and insufficiency detailed above, digitalis and camphor given every three hours during the twenty-four hours, will usually so tonic the cardiac muscle that with the precedent dose of whiskey, no very dangerous symptoms will become manifest from the quinia.

In the above I have attempted to give with some minuteness, the conclusions gathered from my experience with large doses of quinia, administered in a systematic manner, in typhoid pneumonia. The importance and dangerous character of this form of pneumonia and the frequency with which the general practitioner has to deal with it, the good results that have attended the use of large doses of quinia in this disease in my hands, and the apparent want of agreement among physicians as to the value of this line of treatment. are my reasons for presenting this subject to you to-day. Although I may not have advanced much that has not been said before by abler men in a better manner, still I shall rest contented if I have succeeded in directing attention anew to this subject and have thus contributed my share toward confirming this so successful mode of practice in so common and dangerous a disease, and toward making it one of the certainties of the therapeutics of the future which it ought to become be the theory by which we attempt to explain its good results, what it will.

Mt. Vernon, Ind.

THE THERAPEUTICS OF SUBNITRATE OF BISMUTH AND ASCLEPIA TUBEROSA.[1]

BY AMOS SAWYER, M.D.,
OF HILLSBORO, ILL.

That acology has been inexcusably neglected at our society meeting, is a matter of record, and this certainly is not on account of the want of material, surely not because the subject is unprofitable, for it is one of primary importance, and one that every active practitioner can, if he will, assist, if not by adding to, at least by verifying or repudiating the remedial effects credited to each one of the host of agents which go to make up the long list in our materia medica, that he may have prescribed. It would seem to be natural for the mass of the medical profession to receive the expressed opinions of a few noted members as to the efficacy of some new remedy or cause for disease, as verity itself, and overstepping the lines marked out, like magic it becomes the cure-all or cause-all of the day, and until reaction comes, in its own natural time and way, it is useless to attempt to stem the tide. To prove that this statement is true, I need only mention cocaine and the germ theory. It would seem that we could say with Ruskin: "I have little faith in my opinion until I have changed it three times." With this digression I will pass to the consideration of the subject of this paper.

Of bismuth, Pereira, in the first and second edition of his "Materia Medica" says: "The metal is first mentioned by Agricola, in 1529, and was termed by the Germans, Wismuth, so called says Matthesius 'because it blooms like a beautiful meadow on which there are variegated flowers of all kinds.' On man it acts locally as an astringent, diminishing secretion. On account of the frequent relief given by it in painful affections, it is supposed to act on the nerves of the viscus as a sedative. It has also been denominated tonic and anti-spasmodic. It was administered in cramp of the stomach, sickness and vomiting, a remedy for waterbrash, in intermittent fever, spasmodic asthma, and as an ointment in chronic skin disease. Hahnemann recommends a portion to be introduced into a hollow tooth to allay pain." Bartholow in his "Practical Treatise on Materia Medica," 1877, when speaking of the subnitrates says: "They are somewhat stringent and relieve intestinal movements. As they are nearly insoluble they pass down the intestinal tract and are converted into sulphides." The "National Dispensatory," 1884, adds nothing of value to the above.

From this, it would appear that up to the present day it has been administered empirically. Now one, and I believe that it is the *principal* therapeutic effect, lays in its power to coagulate mucus, which may be easily demonstrated by the same process that led to the discovery of this most important property. For a country physician, I have treated a large number of cases of nasal catarrh and various diseases of the throat. After washing out the nose with a solution of subnitrate of bismuth I discovered that the mucus it contained separated from the water in a coagulable mass and that the membrane was in a most admirable condition for application of the local remedies indicated. So also in post-nasal disease where the pharyngeal follicle becomes involved and exude a tenacious glairy mucus which may be moved backward and forth but resists all ordinary means for removal; in such cases, the dry powder dusted upon

[1] Read at the Annual Meeting of the Mississippi Valley Medical Association.

it, will in a short time, coagulate the mucus and put the parts in a condition for the reception of those remedies which while it was so covered protected the parts as effectually as if they were hermetically sealed.

In the summer complaint of children as well as in gastric catarrh, where the follicles of the stomach exude the same character of mucus we meet with in nasal catarrh and pharangeal troubles, as witnessed by Dr. Beaumont in the stomach of St. Martin, when suffering with gastric catarrh, where the food by coming in contact with it by the movements of the stomach, becomes coated with the mucus and the gastric juice was as effectually excluded as if coated with rubber, and it passed into the intestines as a foreign body, and by its irritation and fermentation, caused an abnormal exhalation of gasses and a watery exudation which we term diarrhœa. It is in such cases that the subnitrate in full doses, fifteen to thirty minutes before, with pepsin during or immediately after eating, will usually in acute as well as chronic cases, effect a cure, provided that you remove the cause for this, as I term it, follicular gastritis.

Combined with tannin and laudanum, as an injection, it *at once* relieves the tenesmus of dysentery; and since I have commenced its use as mentioned, with sulphate of magnesia, ipecac and opium, I have never lost a case.

As an application in the form of a powder or ointment in the treatment of old sores, ulcers and moist eczema, it will, in most cases, act charmingly. In leucorrhœa, to cleanse the parts, it has no equal.

Asclepia Tuberosa.—King speaks of it as expectorant without stimulation, diuretic and tonic, principally used in pleurisy, pneumonia, catarrh, febrile diseases, acute rheumatism and dysentery. The "National Dispensatory," 1884, says of it: "Like many other remedies, it has been alleged to possess specific powers in the cure of particular diseases, but a comparison of the reports concerning it shows that it is one of the numerous class of vegetable products which, under certain conditions, act as emetics, and even purgatives, and more commonly as sudorifics, expectorants, carminatives and anodynes. It is useful in acute rheumatism, bronchitis, pneumonia and pleurisy so far as the relation of the nervous and circulatory systems can be so. The 'pleurisy' it is credited with relieving was most probably muscular rheumatism of the walls of the chest."

In the fall of 1852, during the prevalence of a very fatal epidemic of dysentery in Montgomery county, a man recently from North Carolina, living on one of my father's farms, came to me to know where he could find some of this weed, as his wife was almost dying with the pain in her bowels caused by "bloody-flux." One cup of a hot infusion gave almost immediate relief and impressed me, a lad of 15 years, with its great value as an agent to overcome one of the most distressing symptoms in this disease, and one which the physicians at that time seemed powerless to suppress. It is, therefore, in the tormina of dysentery, so distressing to the patient, that the fluid extract in teaspoonful doses every two hours or a warm infusion of the fresh root acts like a charm; and with one trial few will dispense with its services to relieve this condition.

In the so-called "bilious" and other forms of colic, either alone or combined with an equal portion of dioscorœa villosa and a little morphine or chloroform, it acts charmingly; often one, seldom more than two doses being necessary.

The pain consequent on acute muscular rheumatism will be relieved in from six to eight hours by its administration in drachm doses every two hours.

It is, in the severe pains (call it muscular rheumatism of the chest if you please) in pneumonia that I use it most frequently, and I assure you that when administered as before mentioned, it will almost invariably give relief in from eight to twelve hours and this condition can be maintained by ten drop doses every two hours, with such other treatment as is deemed necessary to meet the indications.

In those cases of fever of a continued type, frequently met with in young children as well as adults, which resist the usual antipyretic treatment, I have found it, in small and frequently repeated doses, to act promptly and efficiently, by a marked reduction in the temperature and pulse and a moist skin resulting in the long needed quiet sleep, thus seemingly overcoming a condition which rendered the usual antipyretic list valueless. Asclepia tuberosa is certainly a sudorific, anodyne, and occasionally though an idiosyncrasy an emetic.

Hillsboro, Ill., July 6, 1886.

MEDICAL PROGRESS.

LANOLIN.—In some notes on this subject DR. WALTER G. SMITH says: It is a very interesting body from more than one point of view.

1. It is a neutral fatty salt of cholesterin (a monatomic alcohol) takes the place of glycerin, which is the radical of ordinary fats.

2. Liebreich has demonstrated the wide diffusion of this cholesterin-fat throughout the animal kingdom.

3. It is not a secretion arising from sebaceous or other glands, but is a product of retrograde metamorphosis of keratin or keratin-yielding tissues.

Liebreich suggested, but was not prepared to prove, that cholesterin-fat was present in the keratin-cells, or in the granular layer of the epidermis from which the keratin-cells are derived; but Lewin (*Berl. klin. Woch.*, 1886) has since shown that its presence can be demonstrated micro-chemically in the granular layer of the skin by Liebermann's test (acetic anhydride and sulphuric acid).

4. Lanolin commends itself, pharmaceutically, as a basis for ointments.

Shortly after reading Liebreich's paper, I obtained some lanolin from Mr. Martindale, and began to prescribe it. Within the last two and a half months, I have employed it frequently (over seventy times), and feel assured that it possesses properties which deserve attention from all practitioners. These properties are the following:

a. It is capable of absorbing and intimately blending with large amounts of water, standing thus in marked contrast to popular notions of the mutual relations of water and fats. The lanolin of commerce is a combination of neutral cholesterin-fat with about 30 per cent. of water.

b. It is neutral to test-paper, is not liable to rancidity, and is not easily saponified by alkalies.

c. It is miscible with glycerin, unlike other fats.

d. It rapidly, and in a remarkable degree, possesses the power of penetrating the epidermis.

e. Hence lanolin greatly facilitates the absorption through the skin of drugs mixed with it. So marked in this, that, with poisonous drugs, such as the toxic alkaloids, less (about half) than the usual proportion should be prescribed in ointments. The vaselins and paraffins hinder, rather than favor, the passage of drugs into the skin.

I will now briefly mention two or three cases in illustration of the uses of lanolin.

Eczema.—Captain —, a patient of Dr. Gilbert Lynch, consulted we while on a visit in Dublin. He was a corpulent man, with varicose veins in both legs, and was much troubled by an angry outbreak of eczema rubrum on the legs, on and off for two years. For this he had had the best advice in London, but without very satisfactory results. When I saw him the leg was weeping, fiery red, and intolerably itchy. The following ointment was prescribed. Lanolini 3xij; adipis benz. 3j; liq. plumbi subacet. fort. m xv; acidi carbol. 3ss; olei lavand. m v.

Speedy improvement ensued; the itching was calmed; he was able to walk about in comfort, and in about three weeks was practically cured. Ethereal solution of nitrate of silver (20 gr. to one oz.) was twice applied.

Psoriasis.—Miss G., aged 25, was sent up to me from Doneraile, County Cork. For fifteen years she had been subject to psoriasis, here and there; and in January, 1886, the disease suddenly developed into an extensive eruption over the face, chest, back and limbs; in fact, no part of the body was spared. She was covered from head to foot with small circular scaly patches.

I first prescribed a lotion of soft soap, spirit, and carbolic acid, which smarted her. A few days afterwards, this lotion was applied to one limb and ointment to the opposite limb (lanolin and lard, including pyrogallic acid 40 grains, and salicylic acid 20 grains, respectively, to the ounce). This ointment caused no irritation, and exercised a more favorable influence on the eruption. Progress, however, being rather slow, I substituted for the above ointment a lanolin and chrysarobin ointment (20 grains to one ounce). This produced speedy and marked improvement. In a week there was a striking change for the better, and in a fortnight all infiltration and scaliness had vanished, and no trace of the eruption remained, except some brown pigmentary stains.

White precipitate ointment was used on the face, and with good effect. Arsenic was given internally.

Rheumatic Exudation.—Miss F. was attacked, four years ago, with stiffness and pain in the back of the neck. This gradually became worse, and for some months, she suffered acute pain in the neck, especially upon movement. The head drooped down on the chest, she could not sit at table with comfort, and her life was becoming miserable. On each side of the cervical spine, especially the left, there was an indurated ridge of thickening, apparently in and between the muscles, and very tender to touch. She was given iodide of potassium and chloride of calcium internally, and was directed to rub in gently, but thoroughly, an ointment of lanolin and lard, containing 15 grains of iodide of potassium, 20 grains of iodoform, and three grains of hydrochlorate of morphine to the ounce. Improvement was soon apparent, and steadily continued; and, in about three weeks, she could elevate and rotate the head freely, and with little pain, and the hard infiltration at the nape had greatly diminished. The degree of pliancy conferred on the skin was remarkable, and the effect of the ointment in alleviating the local discomfort was unquestionable. Hitherto, I had found little reason for faith in the efficacy of iodide of potassium applied externally.

I have also used lanolin in acne, and in some other affections; and, speaking generally, can confirm the statement of Professor Liebreich and Dr. Lassar (based on over 400 cases), that it does not cause irritation of the skin. It is true that some cases of eczema were none the better, perhaps even aggravated, after the use of a lanolin-ointment; but similar experience is not uncommon with divers modes of treatment in obstinate cases of this fickle disease, and lanolin is no cutaneous panacea. In ringworm of the head, I have not had sufficient time to judge fairly of its effects.

With chapped hands, its effects are extremely satisfactory, and several bad cases occurring among my friends during the recent severe weather were cured by a single inunction of lanolin. For this purpose, perhaps, simple lanolin is the best to use, as it is rapidly incorporated into the skin. For general use, its stickiness should be counteracted by admixture with one-eighth or one-fourth of another fat (lard, castor-oil, etc.). A few minims of oil of lavender, or oil of eucalyptus, will communicate an agreeable odor to the ointment.—*British Medical Journal*, July 12, 1886.

Continuous Rectal Alimentation.—Dr. Duncan J. McKenzie says that the labors of Sir William Roberts, of Manchester, and others, in the field of artificial alimentation, have undoubtedly made the prospect of supporting life by rectal feeding more bright. There is, however, this difficulty in intermittent administration, that an enema, however small, is apt to cause a desire for defæcation.

It has occurred to me that we may imitate the process of nature more closely by the gradual passage of a fluid from an artificial cavity, in which its digestion takes place, into the rectum for absorption. In this way, supply keeps pace with absorption, and the bowel is not loaded.

The way in which I proceed is as follows: A piece of celluloid catheter (No. 5) is passed into the anus for about two inches; if passed too far, there is a risk of its being closed by the folds of gut. When

once introduced, the sphincter closes upon it, and its presence is hardly felt by the patient; and the celluloid, rigid when introduced, becomes rather softer from the heat of the body. Previously to introduction, this piece of catheter is passed through a thick piece of India-rubber, perforated so as to grasp the catheter tightly. To the four corners of the India-rubber are attached tapes, which are tied, two in front and two behind, to a band round the loins. This India-rubber is passed close up to the anus, and the tapes are tied as tight as convenient. Over the outer end of the catheter is passed one end of a piece of fine India-rubber tubing, such as is used for babies' feeding-bottles. The piece of tubing should be about two yards long, and its other end slipped over a metal tube let in close to the bottom of a moderately tall narrow vessel, made of tin or other material, and capable of holding a pint of fluid. To increase steadiness, the bottom is leaded on the outside. The only other apparatus required, are a milk-strainer to fit the mouth of the vessel, a table about the same height as the bed on which the patient lies, a few small boxes, or some suitable support by which the elevation can be varied, and an ordinary tea-cosy.

A pint of milk is warmed to a temperature suitable for pancreatic digestion; a little bicarbonate of soda, and a proper quantity of some preparation of pancreas, two teaspoonfuls in the case of Mr. Benger's liquor pancreaticus, are added, and it is allowed to stand in a moderately warm place for half an hour. It is then passed through the strainer into the vessel mentioned above. I find that after standing half an hour, the milk leaves little or no curd upon the strainer, and when strained, readily passes through the tubes. If the curding of the milk, by the pancreatic extract, give trouble, it may be prevented by previously adding one-fourth of its bulk of water to the milk (Roberts).

The milk, having been put into the vessel, which acts as the artificial stomach, it is raised from 2 to 2½ feet above the level of the patient's bed, the height being altered according to the rapidity with which the milk runs through the tube. The vessel is then covered with the cosy to keep it warm, and if necessary, a heated plate may be put under it at intervals. The pint of milk should run into the rectum in about three hours, which time fairly corresponds to the average digestion-period of pancreatised milk. If a desire for defæcation be felt, the flow should be made slower, or the apparatus entirely removed for a time.

When the milk has all run out, the apparatus is removed, some clean water passed through the tubes, and the patient allowed to rest for a time before re-introduction.

In this way, a patient of mine, suffering from cancer of the stomach, in whom the colon was obstructed at the junction of the transverse with the descending portions, received an average of three pints of milk per day for a month, with an average daily evacuation of about a pint, consisting chiefly of curd; his nutrition was fairly kept up until vomiting of blood, mucus, and fæcal matter became excessive; and, after death, the whole descending colon was found well nourished and containing condensed milk. His evacuations generally took place from two to eight or nine hours after milk had been administered, care being taken not to give any when the rectum felt irritable.—*British Medical Journal*, June 19, 1886.

CIRCUMCISION UNDER COCAINE.—Various experiments have been made with solutions of the hydrochlorate of cocaine with the object of producing such local anæsthesia of the prepuce as would result in a painless circumcision. The results of quite a number of such efforts, while greatly lessening the pain of circumcision, have not been entirely satisfactory. In the last two operations, however, which DR. F. N. OTIS (*N. Y. Med. Journ.*, May 8, 1886), reports having done by a new procedure, the first was entirely painless; in the second there was only slight sensitiveness in putting in the last few stitches.

The plan pursued was as follows: Retracting the prepuce, 3 or 4 drops of a 6 per cent. solution of hydrochlorate of cocaine were injected with a fine hypodermic needle into the internal layer of the prepuce about half an inch from its attachment at the base of the glans penis. This was done so superficially that, as the needle was withdrawn, a little bleb was formed nearly half an inch in legth. Waiting for half a minute, the needle was again introduced at the opposite side of the bleb, and it slid in painlessly for another half-inch in the line of the circumference of the penis. In this manner blebs were made until the cervix was completely encircled by them.

The prepuce was then drawn forward, and, by a simple procedure, another line of blebs was made to encircle the external preputial layer at the point elected for the incision. This was intended to be directly opposite the line of injection of the internal layer. The prepuce was then advanced so that the line of injection cleared the end of the glans, at which point it was compressed by a clamp, and excised without the least pain.

The clamp was then removed, the internal layer of the prepuce was slit up, turned back, trimmed with the scissors, and attached to the incised edge of the external layer by continuous suture, comprising about twenty stitches. Not the least pain was experienced in the operation except that caused by the first introduction of the needle in the internal layer, and the same in the external layer. 20 drops of the 6 per cent. solution were used in this case. In the second 25 drops of a 4 per cent. solution were injected. The chief embarrassment of the operation consisted in the fixation of the delicate tissues so as to introduce the needle with accuracy, superficially, and to a sufficient extent. An ordinary mouse-tooth forceps answers very well, but a forceps in which the needle can ride would be an advantage.—*Therapeutic Gazette*, June 15, 1886.

BACTERIA-THERAPY.—DR. FRAS. TROUP has recently satisfied himself that a sputum which has putrified for fourteen months still contains tubercle bacilli, which are capable of reproducing their kind; and therefore, the good results of spraying with *bacterium termo* must be attributable to some other cause.—*Brit. Med. Journal*, June 19, 1885.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, JULY 31, 1886.

MEDICINE IN 1936.

As is very well known, the late Dr. Austin Flint was to read the Address in Medicine before the British Medical Association at its annual meeting in August, 1886. After his death the manuscript of the Address was found among his papers, and it has now been printed by Appleton, under the supervision of Dr. Austin Flint, precisely as it was written by his father. It is entitled "Medicine of the Future." This, so far as is known, was the last literary work of the great master, and though he had several months in which to prepare it before it was to be delivered, in this case, as with all his other work, he made his preparations in ample time.

While there is no discussion in the Address of any new method of treating disease, or of any particular subject in medicine, many valuable suggestions may be found in it, and much that will give rise to serious thought. "To look forward, as well as backward, is both interesting and useful. If our retrospections extend over half a century, it is worth while to inquire, How will the present appear in a retrospective view at the end of the next fifty years?" It is in the spirit of this inquiry that Dr. Flint offers some thoughts on the medicine of the future. He assumes that medicine, as it is to-day, will not remain stationary; the past history of medicine shows progress, and it is only natural to conclude that it will continue to advance. The past gives an assurance of progressively increasing security from the outbreak as well as from the effects of disease; and we may conclude that the future will do much more in those directions. As with all sciences, the advances in medicine have been by means of discoveries, improvements and added facts which have marked epochs in its history. In medicine, as in other sciences, there are still many worlds to be conquered, many mines to be explored, and many virgin fields to be turned up and cultivated.

The fifty years preceding 1836 were marked by the discovery of auscultation by Laënnec, the laying of the foundation of renal pathology by Bright; and Bichat, Magendie and Bell created general anatomy and added to the knowledge of the nervous system; Poiseuille conceived the idea of a sphygmograph in 1829, though it was not until the present half century that the lever principle was applied to this instrument, which, in spite of its general neglect at present, is destined to great service in the future. It was in 1831, just five years before the beginning of this half century, that Leuchs showed the diastatic action of the saliva. Carminati and Prout (1785 and 1824) found that the gastric juice was acid, and that the gastric juice contained hydrochloric acid; and it was in the first year of this half century that Sprott and Boyd discovered the gastric glands. In the same year Schwann isolated pepsin, while two years before Eberle prepared artificial gastric juice. It was in the first year of the last half century that Purjinke and Pappenheim referred to the fat-splitting action of the pancreatic juice, and its diastatic action, its emulsifying power, and its tryptic action were soon discovered by Valentin, Eberle and Bernard. It may seem remarkable that nothing, comparatively speaking, was known of the liver until 1838. It is within this half century that the reflex system of nerves was discovered and the separate functions of the different portions of the spinal cord; the recognition of the self-limitation of certain diseases; that histology has been created by the microscope; that certain cerebral functions have been localized, and that cerebral surgery has been put on a new plane; that ovariotomy has been revived and brought to its present state of perfection; that anæsthesia has been discovered; that the clinical use of the thermometer has been revived; and that the bacterial origin of diseases has been revealed.

To what department of medicine must we look for the most brilliant results in the next fifty years? Most probably to that of physiological chemistry, which carries its investigations beyond the bounds of microscopical observation. The application of the microscope to the study of healthy and diseased tissues has given a wonderful impulse to medicine, and it is entirely probable that much more will be done as that instrument is improved in its construction, and as further progress is made in the use of staining agents. It is probable also that the use of the spectroscope will be greater. But it may be said that the probabilities and

possibilities of physiological chemistry are limitless. The work begun by Liebig has only just begun. Histology may disclose agents, but to physiological chemistry we must look for the agencies. It is in this field that we must work if we would find out how secretions, excretions, nutrition, growth and certain morbid products are brought about. The microscope has revealed the existence of micro-organisms, but physiological chemistry must tell us regarding the toxical products of these microscopic agents, and how they give rise to disease. So also in regard to the action of drugs. It is not an explanation, but a statement of a fact to say that a certain drug acts upon a particular tissue, or that it causes a particular effect. Chemistry must tell us how and why this drug acts in a certain manner. These views have been repeatedly advanced, and the supreme importance of chemistry as a corner-stone of medicine has been advocated in THE JOURNAL for some time past, and it is with no little pleasure that we now record the endorsement of the departed master.

Fifty years ago that man would have been thought an idle dreamer who had said that within the memory of some then living it would be possible to converse with a person hundreds of miles away, or that a fibroid tumor of the uterus would be melted away by the electric current, or who mentioned such words as phonograph, microphone, or cablegram. These marvelous developments of electricity, says Dr. Flint, have not added much as yet to our knowledge of the normal and abnormal actions taking place within the human body, but much is to be expected from this source in the future. "It seems to me certain that the principle of the telephone will, by and by, be applied to intra-thoracic respiratory and heart-sounds, so that they will be transmitted to the ear with more distinctness than they now are by the binaural stethoscope. The healthy and morbid sounds will then be so easily discovered as to render the physical diagnosis of pulmonary affections in all cases a very simple problem. More than this, the clinical teacher may be able to demonstrate auscultatory signs to a class of medical students comfortably seated in the lecture room or hospital amphitheatre." The same may be said in regard to the physical diagnosis of heart sounds. "I will go further, and say that intrathoracic sounds may be transmitted from the patient to the physician, no matter how distant one may be from the other. Again, and still further, the sounds from the chest of a patient may be phonographically, transported never so far, and made available after an indefinite period." "Who knows," said Robert Hook, in 1705, "but that one may discover the works performed in the several offices and shops of a man's body by the sounds they make, and thereby discover what instrument or engine is out of order!" Surely Hook might claim, were he now living, that his prophecy of one hundred and eighty-one years ago had been fulfilled by Laënnec. But who will say that his prophecy has been completely fulfilled? Who will attempt to predict the limits of auscultation when the foot-fall of the fly has been heard through the microphone?

Again, the sum of our knowledge of the natural history of disease has been vastly increased in the last fifty years. Half a century ago the sharp line between self-limited and other diseases had not been drawn, but we can scarcely estimate the influence of our present knowledge of the natural history of diseases upon therapeutics. There is still much to be done in this great field. "With the now prevailing views, it seems a surprising statement that phthisis pulmonalis may be self-limited and end in recovery purely from an intrinsic tendency; yet, I venture the assertion that the correctness of the statement has been substantiated, and that before many years elapse it will be generally acknowledged to be a clinical fact. How important is this fact in judging of the agency of medicinal, climatic, and hygienic measures in the treatment of this disease!"

Dr. Flint predicts that venesection, "the lost art in surgery," will be revived. It may be questioned, however, if bloodletting be really a lost art. It is not so frequently resorted to as formerly, but we know more of its dangers than did medical men fifty and one hundred years ago. The giving of calomel in ten grain doses, and more, may be said to be a lost art in the same way as indiscriminate venesection, or as the use of small doses of quinine in malarial fever. It is a mistake to suppose that venesection has been abandoned; it is a much more serious mistake to resort to it when not indicated. We should take advantage of its prompt and efficient effect in certain conditions of disease; and we must "observe a proper conservatism as regards its potency for harm as well as good." It is quite certain that its dangers and evils were formerly overlooked, and that they are now somewhat exaggerated. It should be remembered that "a remedial agent can have but little value if it be not capable of acting injuriously as well as usefully. In the ability to employ potential agencies so judiciously as to secure their good and avoid their evil effects, lies the secret of true success in the practice of medicine."

The bacterial origin of disease is intimately connected with preventive medicine. We may be said

to be just awakening to the dawn of a great revolution in medicine, and in this revolution bacteriology and preventive medicine will play a most important part. Our lack of information regarding the etiology of diseases is deplorable. This field will yield a rich harvest to patient workers, and as it is tilled preventive medicine will gradually claim its proper recognition and importance. The time has past when one may say that a disease has a spontaneous origin. One point which Dr. Flint makes is, assuming the truth of the parasitic origin of any one of the infectious diseases, that it is a logical inference that this truth is applicable to the other diseases of that class; and furthermore, the discovery of a specific microorganism as the cause of a disease, places it in the list of infectious diseases, although it may not have been considered as belonging to the class. And if this reasoning be correct it is only a question of time when specific organisms will be discovered for all the infectious diseases. And what will be the influence of these discoveries upon medicine in the future? "Having acquired knowledge of the natural history of the different species of parasitic organisms, a great practical object is to find means for their destruction within the body." We can scarcely doubt that this will be done. Though the parasite of malarial fever has not yet been certainly described, the parasiticides of the disease were discovered long ago. It is possible that parasiticides in cases of other infectious diseases may be discovered before the parasite, or *vice versâ*. There may be very many difficulties in the way, but as each one is overcome the others become easier. But we have thus indicated only a portion of this vast field: when the parasite is discovered we must find some means for preventing its growth and terminating its existence outside the body, and for effectually excluding it from the body; and it is here that preventive medicine claims its place. It is very probable that the work now being done in the way of inoculating with attenuated virus will at some time put us in the way of forestalling other diseases than small-pox.

And besides all this there are glands within the human body the functions and uses of which are but little known, and whose pathology is an unexplored field. The spleen, the gastric glands, the glands of Lieberkühn, the lymphatic glands, the thyroid gland and the supra-renal capsules, and even the liver, are vast and fruitful fields for future clinical, physiological and pathological research.

Space is wanting to follow the address in the remarks on the future of medical literature, on the future of the profession, on future medical teaching, and on specialism. The only regret on laying the little volume aside is that its great author has finished his work.

THE BEARING OF THE PRESENCE OF ALBUMIN OR SUGAR IN URINE ON LIFE INSURANCE.

It has come to be a well-known fact that albumin is often detected as a temporary constituent of urine in persons who present no other evidence of ill health; and the same may be said in regard to the presence of sugar. To medical examiners and medical supervisors for life insurance companies such cases give much embarrassment. And to arrive at conclusions just both to the applicant and the insurance company it is necessary not only to repeat the chemical tests on urine passed at different times in the day and at intervals of several days, but to add examinations with the microscope. The following suggestions taken from a letter written by one of the most experienced Medical Directors of an important life insurance company in Philadelphia, are worthy of note:

"*Dear Doctor*:—In reply to your favor in regard to our action in cases where albumin is found in the urine, I may state that the following is our custom: Where the applicant is (1) a young person of good habits, (2) good family record and (3) physique, and the amount of (4) albumin is small and (5) specific gravity normal, we usually request the examiner to make several examinations of the urine at such times as he sees fit, to find whether the presence of albumin was accidental or not. In such cases, if it is proved that it is not a constant condition and due to renal disease, we will probably issue a policy for a small amount. If a large amount of insurance is requested we would require a microscopical examination of the urine under such circumstances.

"If the applicant is (1) past middle age, at the time when degenerative process begins, (2) has been a free liver or accustomed to luxurious habits or has undergone mental strain, (3) or has been overworked and closely confined to business, (4) with irregular hours, etc., the presence of the smallest amount of albumin in the urine we consider an absolute impediment to life insurance.

Possibly science may teach that such persons, with great care, will live as long as any one, and therefore the *family physician* can give a favorable prognosis, but an insurance company which is obliged to take *only safe risks* cannot place money on such an individual.

"The same action is taken when sugar is found."

DEATH OF DR. R. C. HAMILL.

Died at his residence in Chicago, on July 21, 1886, Dr. R. C. Hamill, one of the oldest and most highly respected practitioners of medicine in the city. Although 78 years of age, he had continued to attend to his ordinary professional duties more or less, until near his death.

For many years he had been an active member of the Chicago Medical Society, the Illinois State Medical Society, and the American Medical Association, to the *Transactions* of all of which he had made valuable contributions. He was a faithful, generous, and skilful general practitioner, commanding the full confidence of a wide circle of patrons. As a citizen, he was universally respected, for he was a man of perfect integrity whose highest enjoyment was derived from relieving human suffering and in promoting the best interests of the whole community.

AN EXCELLENT EXAMPLE.

We are informed by the Treasurer of the Ninth International Medical Congress that he has received, for the Congress, the sum of $500, donated by the Michigan State Medical Society at its recent annual meeting. The Executive Committee of the Congress must necessarily expend a large sum of money in printing and distributing circulars, and in perfecting all the arrangements preliminary to the actual assembling of the Congress. The liberal action of the Michigan State Society is timely and appropriate. It is very desirable that the good example presented should be speedily followed by the State Medical Societies of other States, and also by the leading societies in our most populous cities and counties.

COLDWATER SANITARY CONVENTION.—The Sanitary Convention previously called for Sept. 23 and 24 in Coldwater, Michigan, will be held on Thursday and Friday, Sept. 9 and 10, 1886, instead of the first named dates.

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Forty-Sixth Regular Meeting, Friday Evening, April 23, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

(*Concluded from page 107.*)

DR. JOHN BARTLETT made remarks upon, (with the exhibition of specimens of)

(1)—A CASE OF DERMOID CYST COMPLICATING LABOR.
(2)—A CASE OF PLACENTA PRÆVIA IN WHICH THE PLACENTA WAS EXPANDED OVER THE ENTIRE OVUM.

Dr. Bartlett said: "I have recently seen two interesting cases of labor, and I wish to present a specimen obtained at each of these, to the Society. The first was a case in which I was called to assist Dr. John S. Clark. The patient, a primipara, about 30 years old, had been in labor under the care of a midwife about twenty-four hours. The head was making no progress, and exhaustion was approaching; about one ounce of fluid extract of ergot had been given. Dr. Clark found the head lying with the antero-posterior diameter corresponding with the conjugate, the parietal eminences had passed the brim. He applied an old style, high curve, Bedford's forceps, but found his efforts unavailing in causing the head to advance. Dr. Bartlett then attached his direct traction handle, and descent of the head was effected. After delivery of the head there was difficulty in delivering the shoulders. When an effort at extrusion was made, there appeared in the perineal region, between the vulva and tuberosity of the ischium, a jutting outward of the tissues in the form of a tumor. It seemed as if an obstructing body was wedged in front of the shoulders. Counter pressure was made upon the protrusion, and the delivery was completed. Following the child, came a tumor of the shape and size of a learge pear, presenting at the small extremity a pedicle. It was a thin dermoid cyst containing a mass of fatty substance, embedding numberless long intertwining hairs. The tumor could not be felt during labor, and a careful inspection showed that it had not been attached to the child. It was probably attached to the uterine surface, resting between the head and the shoulders. Possibly it was the cause of the dystocia in diverting the head from an oblique diameter of the brim. Depression of the vital powers with high fever set in soon after delivery, resulting in death within four days. Dr. Clark's examinations, *post partum*, detected no injuries beyond laceration of the perineum. The child was still-born.

The second case was one of placenta prævia. Mrs. N. had several children, and within eighteen months past, two miscarriages. In January last, when she was nearly four month advanced in pregnancy, I was called because of serious hæmorrhage. The uterus presented to the touch nothing peculiar, there was none of that extra development of the lower segment of the organ which is supposed by some to indicate placenta prævia. The tampon was applied, opiates given, rest enjoined, and the bleeding ceased. At four and one-half months the hæmorrhage recurred. Under treatment, the bleeding was in some measure controlled. For the two following months it was continuous, generally moderate, occasionally quite severe, at all times, as she declared, four-fold greater than the flow of menstruation. I then deemed it best at six and one-half months to induce labor, but Dr. John S. Clark, in consideration of the probable non-viability of the child, advised further delay. The flow, however, was so great that the tampon was ap-

plied, and in forty-eight hours thereafter labor began. Upon removing the plug, the os was found thin, softened, and three-quarters of an inch in diameter. At about the fourth hour of labor, the os rather suddenly enlarged to a diameter of one and a half inches, and the hæmorrhage became profuse. The half hand was introduced into the vagina, and the placenta stripped off over an area, the radius of which was three-fourths the length of the middle finger. With the bullet forceps, used by me with advantage in such cases, the membranes were torn, and the opening so made was freely enlarged by the finger. Hæmorrhage immediately ceased, and labor became more active, so that in the course of an hour the child was delivered, breech first. Several inspirations were made by the fœtus, a fact of interest, in view of the peculiarities of the placenta, which I here present. In order to display the specimen to better advantage, I have filled the cavity of the membranes with horse hair and sewed up the aperture. It will be observed that the main body of the placenta, the normal placental mass, is not prævia, but attached near the fundus, and that the rare anomaly is here presented of a continuous placental tissue spreading over the entire ovum. Observe that the extra, adventitious portion, continuous with the normal placental edges, and everywhere enveloping the membranes, is comparatively thin; in the present state not thicker than one-eighth or three-sixteenths of an inch.

Dr. W. H. Byford spoke of a specimen he exhibited some time ago at the Chicago Medical Society—a dermoid cyst which was expelled from the vagina. It was sent to him by Dr. White of Bloomington, who said the tumor was situated in the anterior wall of the vagina, and as the child was delivered the pressure of its head pushed the tumor out before it. He thought that in the case under discussion the tumor may have been developed in the vaginal walls. The localities of these growths are not uniform and we find dermoid cysts situated in the vaginal walls. Bartlett said in answer to a question from Dr. Byford that the existence of the cyst was not discovered before but during labor; that it was beyond the head and may have been an ovarian tumor; it was not outside the vagina, but between the head and shoulders. Dr. Byford thought it almost certainly a dermoid tumor of the vagina. He thought that these cases are almost always found in old or multiparous patients.

With reference to Dr. Bartlett's second case, he asked if the hæmorrhage ceased before rupturing the membranes, or if the whole operation was done at once. Barnes claims that if the membranes are separated over the cervical zone the hæmorrhage will stop; that there will be sufficient retraction of the cervical zone to close up the mouths of the vessels. He thought it a point of interest to know whether or not that would have stopped the hæmorrhage, and whether it would not have been sufficient. He thought in that case one is not called upon to leave the membranes intact.

Dr. DeLaskie Miller said that the effect of endometritis is usually to increase the area of the development of the placenta, and he had not infrequently seen cases of placenta of the usual size, on which projections appeared in different parts in the interior of the uterus, partially connected or entirely disconnected. He asked whether a case of endometris might not allow the villi of the chorion to form these *placentæ succenturiatæ*. He was inclined to think that condition would encourage it. Another fact in the history of the case that would perhaps justify this theory was the several miscarriages the patient had experienced before this pregnancy.

Dr. T. D. Fitch said that in thirty-five years of practice, in which he had probably attended more than a thousand cases, he had seen but one case in which he suspected placenta prævia. He was sometimes ashamed to make the statement for fear his experience had been from lack of close observation, or inability to recognize a case, but he had seen only one, and did not know that that was really a case of placenta prævia. He did not detect it by manual examination; the symptoms were altogether subjective. It was a seven months' labor and the child lived. There was a good deal of hæmorrhage. He had no difficulty with the labor, except from the hæmorrhage, and that did not prove serious.

The President asked if any one could suggest the origin of the tumor? Was it a twin or a dermoid thrown off from the fœtus, or was it from the mother. He asked Dr. Bartlett if it was a part of the child, and was answered after careful examination no place was found where it might have been attached. It was perfectly loose in the vagina; probably the pedicle had been ruptured.

Dr. Edward Warren Sawyer thought with reference to Dr. Bartlett's second case the case had several interesting features, and the subject itself is full of interest. He referred to a conversation earlier in the evening in which Dr. Byford had said that he had been in practice many years before seeing a case of placenta prævia, and the first case he ever saw was the first of three in one night. It had happened to Dr. Sawyer to see a number of cases of placenta prævia. He had had two fatal cases, and had learned something of early diagnosis, which had been profitable to him since, and he thought of it in the obscurity of the diagnosis in Dr. Bartlett's case. He said that in one of his cases, after reading of the ease with which one could auscultate the lower segment of the uterus under these circumstances, he prolonged his stethoscope with a long flexible tube, put a cup on the end of it, and had no trouble in introducing it into the woman's vagina. He had repeatedly detected portions of the cervical attachment of the placenta by this mode of auscultation. The remark made by Dr. Byford had received some confirmation in his experience, viz.: that many cases of placenta prævia aborted early and that he believed this to be a frequent cause of early abortion. Spiegelberg says that placenta prævia is of frequent occurrence. An interesting fact in connection with Dr. Bartlett's case was the alarming amount of hæmorrhage which took place from the placental attachment away from the main part of the placenta; or in other words, there were sinuses in the cervical zone of this uterus which were covered only by the velamentous

portion of the uterus—sinuses large enough to bleed, and exsanguinate the woman. Dr. Sawyer spoke of a case to which a former pupil of his was called. A midwife summoned him at midnight to see a woman who was bleeding to death. As he entered the room she handed the doctor a cord (the child was delivered), and the placental end of the cord was a disc about as large as a butter dish. That fleshy mass had been pulled directly from the placenta and the woman was actually bleeding to death. This little mass was very thin, and he was at a loss to understand to what part of the placenta it could have been attached. He delivered the woman completely and she was saved. He found a hole through the placenta corresponding to the disc which had been pulled out; it was in the thin portion of the placenta, and the bleeding was somewhat alarming. Referring to the question that Dr. W. H. Byford asked concerning the mode of treatment advocated by Barnes, Dr. Sawyer said he was full of the idea, and the feasibility of it was accepted by him in his first reading of Barnes's work, and he tried to adopt it in practice, but he hoped no one would ever get himself into such a dilemma, as he was sure he lost his patient by that course. Theoretically you may detach enough of the placenta to save the woman from hæmorrhage. The so-called cervical zone is not to be measured by the finger; he did not think it had any definite boundaries; it might sometimes extend halfway to the fundus on one side of the uterus, and he thought the more we detach the more dangerous it may become. He felt quite confident that the poor woman who was the victim of Barnes's theory would not be dead to-day if he had adopted a more rational treatment.

There was one point in connection with the causation of placenta prævia that excited a great deal of interest in his mind. He had seen two cases strangely confirmatory of the movement of the ovum in the early days of its sojourn in the uterus. One case was also seen by the President, but he had never spoken to him of the theory of which the examination of the placenta had been the origin. Dr. Sawyer had written to several prominent obstetricians of this country, asking if they knew anything in the literature which would answer the question: Can the ovum once attached to the decidua of the uterus become detached and again attach itself to the lower part of the uterus and go on through pregnancy? In other words, can the ovum detach itself, drop from the top of the uterus to the bottom, re-attach itself in the cervical region? Many learned men replied that they had never heard of such a possibility. But Dr. Harris, of Philadelphia, hit upon this happy expression: "Rotation of the ovum." He had seen two cases in which he thought the ovum rotated in the earliest days of pregnancy; not a complete rotation, but an almost complete detachment and rolling, or rotating, downward and there attaching itself. The second case was in the practice of Dr. Doering. The subsequent examination of the placenta showed a case of partial placenta prævia. The umbilical cord springs from the margin of the placenta in both instances; and his theory was that in the first case, which was that of a young primipara, the placenta was fixed normally at the fundus and the cord sprang from the middle; there was a history of a sudden jar of the body when she was about three weeks pregnant; she jumped from a high wagon aud immediately flowed a little, and when she came to be delivered she had a complete placenta prævia. The examination of the placenta showed that the cord was attached to one margin, showing that it had rolled down and formed a new attachment for the umbilical cord. When the placenta was at the fundus and the cord at the middle, by its rolling downward it placed the cord at the margin. He thought one of the most important causes of placenta prævia is this rotation of the ovum very early in pregnancy; a rotation may be caused by a sudden jar, and he thought the confirnation of it is in the unusual attachment of the cord.

DR. J. H. ETHERIDGE had seen one case of a woman with placenta prævia with twins. At about the fourth month the woman fell and struck the lower part of the abdomen against a washtub, she had a little hæmorrhage, and from that time till term she was always tender at that spot. Free hæmorrhage took place and he was called to see her. The woman was delivered of a mature fœtus, and of a child that was evidently arrested in development about the fourth month. The theory was that there was a partial detachment of the second placenta, the other child went on and developed regularly. The mother died in a few hours after delivery.

THE PRESIDENT wished to say a word about the theory of causation advanced by the Secretary, the idea of displacement, or rotation of the ovum after implantation. It seemed to him that there was a more important cause, and in all the cases he had personally investigated, about four, there had apparently been good reason for the theory that disease of the uterine mucous membrane, inflammatory and with an unusual pathological amount of secretion over its surface, is the cause of the implantation at the cervix instead of at the normal place, in the vicinity of the entrance to the Fallopian tube. From the quantity of the mucus the ovum glides down to the cervix and remains there, because the tissues are more healthy, perhaps. In two cases of placenta prævia that he had knowledge of pregnancy occurred some time after treatment, with a previous history of sterility, or of miscarriages, and possibly the mucous membrane nearest the cervix was in a more healthy condition than that near the Fallopian tubes, or possibly there was constriction of the internal os. It seemed to him there was good reason for the belief that if the mucous membrane at the fundus is not in a good condition to nourish the ovum and to hold it, it falls to the internal os and is there held, and there is a possible placenta prævia at full term. He wished to know if in Dr. Etheridge's case there was any previous knowledge of uterine disease? Dr. Etheridge replied that there was none; the woman was a healthy Scotch woman.

DR. ETHERIDGE asked whether placenta prævia is a common thing in animals.

DR. SAWYER replied that he had seen a mare throw off her placenta before she threw her colt, and in

fact she died without throwing the colt. He said further that he believed cervical pregnancy is generally recognized as being secondary to another thrown off from the fundus; that being the case, why not a secondary attachment or lodgment of the ovum at the lower segment of the uterus, as well as in the cervix itself. He believed the majority of authorities is against the idea of cervical pregnancy in the abstract, but he thought Dr. Bartlett considered it possible to conceive in the cervix.

The President said there might be disease of the uterus there, and then comes the question whether this is the sole cause, or one of the many causes The question had been asked whether placenta prævia is of frequent occurrence among prostitutes, women who might be supposed to be anxious not to become pregnant, and he thought it had been answered in the negative.

Dr. Sawyer asked if the President's theory was correct and his observations had been confirmatory of it, how is it that Spiegelberg can say that many primiparæ, young, healthy women miscarry on account of placenta prævia.

Dr. Sawyer thought that pregnancy itself was infrequent among prostitutes.

Dr. H. P. Newman mentioned a rare case which had lately come to his notice, namely, a complete central implantation of the placenta, in which no hæmorrhage had occurred throughout the entire pregnancy until the very last days of gestation.

Ten days prior to delivery at full term there was the first appearance of bleeding,—easily checked by assuming the recumbent posture; and it was not until five days later that the hæmorrhage became at all abundant.

Delivery took place on Tuesday, April 13th.

On the preceding Friday Dr. R. N. Hall was called, and diagnosticated placenta prævia, using the tampon. I first saw the case in consultation with Dr. Hall on Tuesday morning. The repeated tamponing and use of the colpeurynter the night before, had had the effect of gradually bringing on labor pains, and softening and dilating the cervix to the diameter of nearly two inches.

A digital examination revealed nothing but a thick placental surface upon all sides, covering, as we afterward found, the entire lower segment of the uterus. By bimanual palpation we made out a shoulder presentation (left dorso-anterior), and decided on immediate delivery.

Every preparation being made to control hæmorrhage, the placenta was carefully separated from its uterine attachments upon the left side, and the right hand carried upward between the membranes and uterine walls.

When the feet were reached the sac was ruptured, podalic version performed, and the child extracted. Meanwhile Dr. Hall had followed up the evacuation of the uterus by firm bimanual pressure upon the uterus through the abdominal walls. The placenta, which was a large one, and pretty evenly distributed upon all sides, was separated from its remaining attachments, and removed as speedily as possible. The entire procedure was accomplished in less than five minutes, and the hæmorrhage was not excessive considering the gravity of the situation.

The child was saved, and notwithstanding the amount of blood lost by the mother at and previous to delivery, she convalesced rapidly, and is now up and about. She is a strong, healthy woman of middle age, has borne seven children, and has had three miscarriages.

With the exception of rapid childbearing, a laceration of cervix, and one faulty presentation necessitating version, her former history has no particular interest.

Dr. Bartlett said, in closing the discussion, that in a paper written years ago he had expressed an opinion that placenta prævia was one of the simplest of the *errores loci* of the ovum, that the true site of the placenta, when prævia, was the cavity of the cervix, that is, below the os internum, or the so-called ring of Bandl. Dr. Bartlett took occasion to emphasize his conviction of the truth of the position taken by him in the paper referred to. In the case now before the society corroboration of his idea might be found. An ovum resting in the comparatively large cavity of the uterus would take root on the surface to which it chanced to be more nearly apposed. An ovum arrested in the much more circumscribed cavity of the neck might secure a more general, and in some rare instances, a complete attachment to surrounding uterine tissues.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, May 6, 1886.

The President, B. F. Baer, M.D., in the Chair.

(Continued from page 104.)

Dr. M. O'Hara reported a case of

EXTRA-UTERINE PREGNANCY WITH RUPTURE OB THE FALLOPIAN TUBE; LAPAROTOMY ON THE THIRTY-THIRD DAY; RECOVERY.

On September 25, 1885, Dr. O'Hara was called to see R. H., who had been in good health until seized, two hours previously, with severe rectal tenesmus, agonizing pains in the pelvis, pains from both flanks, and extending down the right leg and arm. From the tenesmus she thought she would have a stool, and rushed to the water-closet, but no relief following, rushed to her room and fainted; she was carried to bed, rectal injections were given by those present, but no movement followed, and opiates were given for the relief of the pain. When I saw her she was in collapse, almost pulseless, respiration shallow, extremities cold. The whole surface was bedewed with a cold death-sweat. She could not lie on her left side or back, but reclined doubled upon her right side, and would jump up occasionally with exclamations of agony. The history hastily gathered gave the following data: R. H. was 30 years of age, the mother of three healthy children, the youngest one year old; she was still nursing it. She had never been sick, and had menstruated regularly. One men-

strual period had been missed about a week before the accident, and she considered herself pregnant.

The diagnosis was internal hæmorrhage, due to rupture of the Fallopian tube at the fifth week of pregnancy. Opiates and stimulants were used. The next day Dr. Parish was called in consultation, and concurred in the diagnosis. There was still some shock, pulsation 130, feeble and irregular; respiration feeble; temperature normal; great pallor, evidently due to the loss of blood; the abdomen was moderately distended with occasional cramp-like pains; moderate tenderness, but no symptoms of peritonitis. The patient showed signs of reaction and laparotomy, though discussed, was deferred. Five days after the rupture the patient was able to bear a close examination. The abdomen was greatly distended; there was no tenderness on moderate pressure; resonance was general except in right flank, where there was moderate dulness; there was no dulness in the left iliac and lumbar region except very far back, near the kidney. There was an apparent bulging of the right flank. The vaginal surface was generally œdematous, the anterior wall of the vagina was thicker at the cervix and to the left. The cervix is moderately soft and patulous; no bulging of the posterior pouch. It was not deemed advisable to use the sound. The urine was almost black in color. Pulse 104, temperature 99°, respiration normal. Two days later a marked jaundice appeared, although occasional vomiting and purging of bile occurred. A few days later a swelling was noticed on both sides and in front of the cervix, and a bloody painless discharge, containing decidua-like fragments, escaped from the uterus, and the dulness in the right iliac region disappeared. Urination became painful and difficult. The patient felt so much better that she desired to get up.

Three weeks after the first attack a terrible flooding occurred; it lasted for an hour, and slight hæmorrhage continued afterwards. There was decidua in this discharge. At the same time the supra-pubic tenderness extended towards the right and slightly increased on the left side, extending upward as high as the umbilicus. Chills and a rise of temperature to 101°, vomiting, constant sharp cutting pains, and emaciation, with signs of softening along the crest of the ileum, and general appearances of blood-poisoning occurred, and surgical interference was strongly urged as the only means of averting death. On the thirty-third day Dr. Parish operated, and he prepared the following report of the operation:

There were present Drs. O'Hara, R. P. Harris, De F. Willard, and McElroy. I proposed to cut down directly on the tumor by an incision immediately above the outer portion of Poupart's ligament, believing that the tumor consisted of blood coagula and pus located external to the peritoneum, and that the anterior parietal peritoneum had been dissected up to such an extent that the mass could be excised and emptied without opening into the peritoneal cavity, and without incurring the possibility of objectionable fluids reaching the serous surface. I also believed that the peritoneal cavity was clean, and that there had been no general peritonitis.

The gentlemen present advocated a median incision; for purposes of exploration and in deference to their views, I first cut through the linea alba just below the umbilicus, making an incision long enough to admit two fingers. The peritoneal cavity was found empty and the peritoneum quite normal, though somewhat congested. The exploring finger showed that the mass was external to the peritoneum, and extended upward from the left half of the pelvis to a level with the umbilicus. The broad ligament had become obliterated by separation of its layers. It was not thought advisable to explore with the finger with the view of determining the condition of uterus, ovaries and tubes. The peritoneal covering of the abnormal accumulation was evidently thin and tense, so that a careful exploration as to the condition of the uterine appendages would have endangered its rupture and the probable development of general peritonitis. It would have been an easy matter to have stitched the parietal wall of the tumor to the walls of the median incision and to have then, by incision, emptied the mass of its contents. But such a procedure would have been attended with risk of leakage of the offensive fluid into the peritoneal cavity. To avoid this risk, I now made another incision along the line of original election, *i. e.*, above the outer border of Poupart's ligament, and readily reached the mass cavity without wounding the peritoneum. This incision was made long enough to admit two fingers. About one quart of blood coagula, fluid blood and pus, escaped. The fibrinous masses were removed and all attached portions were scraped off with the fingers. The curette was avoided, chiefly because of the thin upper wall. The cavity was washed out with antiseptic fluid.

The median incision was closed with sutures, and a drainage tube introduced into the mass cavity. An incision could not have been safely made through the vagina, as the intervening tissue was too thick, and its vascularity too great. The incision made admitted of more thorough emptying of the cavity.

The patient suffered no shock from the operation. There was a slight sanguinolent discharge, containing small clots, from the drainage-tube, amounting to about two ounces in twenty-four hours. Nourishment was taken fairly. The cavity left at the time of the operation held ℥xxxii. In two days it had contracted to ℥i, but the discharge was purulent and offensive. A bloody discharge from the uterus had continued since the operation, but was free from odor, and diminishing. The last sutures were removed five days after the operation, and ten days later the drainage-tube was replaced by a tent. Two weeks after the operation the uterine discharge had ceased, but free bleeding from the wound occurred; there had been no exertion, sneezing or coughing, to cause this hæmorrhage, which occurred about eight weeks after the last menstruation; but a week later, a bloody discharge occurred from the uterus and wound. The temperature rose to 103°. There was no pain on pressure, but there was a suspicious hard spot in the left iliac region. Twenty-four days after the operation the patient was permitted to sit up, and while cheerfully singing felt blood streaming

down her legs from the wound; clots passed also from the uterus and rectum. She felt the rectal tenesmus and pains in right lower extremity similar to those felt at the first seizure. Much blood was lost. A similar bleeding occurred three days later, and as life was endangered it was thought necessary to give ether and explore the cavity. It was found that the tissues had been dissected up by accumulated blood and pus until the cavity extended down the side and front of the uterus and communicated with the rectum at the upper end. The cavity was thoroughly scraped with a curette and was then packed with alum sponges after disinfection with Platt's chlorides. The patient reacted well. When the wound was injected nothing came from the rectum, but an injection into the rectum came out of the wound, and there was a fæcal odor about the wound. Next day the sponges were removed and muslin tampons wet with phenol sodique were introduced. The packing was changed twice each day. Discharges of offensive fæcal matter and a small gall stone escaped from the wound.

On February 15, nearly four months after the operation, the patient is noted as doing uniformly well; the wound is closing; the exudation about the uterus and vagina is disappearing, and the odor and elimination of gas while dressing the wound had disappeared.

May 1. Patient has gained greatly in flesh and presents the appearance of perfect health. A very small short sinus alone remains. The communication with the bowel has closed entirely. Menstruation occurs normally and there is no bleeding at any time from the wound.

Dr. Parish made a few remarks upon the history of this case and the difficulties surrounding a diagnosis. The patient was 30 years of age and perfectly healthy. She missed one menstrual period and a week later, possibly in the fifth week of pregnancy, there were signs of internal hæmorrhage with shock. Dr. O'Hara at this time made his diagnosis, doubtless correct, of tubal pregnancy with rupture of the cyst. The patient commenced, after a few hours, to rally. Dr. Parish was called in consultation the next day; he suggested an operation to remove the cause of the trouble but did not urge it as the symptoms had ameliorated. The patient continued to improve for several days. Afterwards a tumor appeared. The first hæmorrhage being into the folds of the broad ligament and limited did not show, but as repeated hæmorrhages occurred the tumor increased, pus formed, the embryo softened, septicemia without peritonitis was developed and then the operation was performed and was then imperatively demanded. Three months after the original shock a sudden and nearly fatal hæmorrhage occurred simultaneously from the wound, vagina and rectum. Evidently there was a tubal communication between the uterus and the wound and a large rectal fistula had formed. This fistula healed without any separate operation.

There was evidently at the beginning, a pelvic hæmatocele without peritonitis, due to a ruptured Fallopian tube. The early operation was proposed but did not meet with approval. It was evident the hæmorrhage was extra peritoneal as it would most probably have been fatal if it had burst into the peritoneal cavity. He deprecated the expectant plan of treatment of cases of rupture of the cyst of tubal pregnancy, but in this instance the amelioration of the symptoms at the time when first seen by him led him to hesitate as to the necessity for immediate operation. The sequel showed that in this case an early laparotomy would have been of no service. The patient's recovery is complete.

Dr. Harris heard of this case a week after its commencement and believed from what he knew of it at that time, that it would be advisable to perform the laparotomy; but subsequent developments indicated that the hæmorrhage was extra peritoneal and gradual, and there was, therefore, no immediate danger to be overcome. When, however, he saw the patient, October 28, he was satisfied that her constitutional symptoms required that an exploration of the abdominal cavity should be made, the blood cyst defined, and then that the blood should be evacuated above the left groin. This opinion being sustained in the consultation, the operation was performed accordingly.

Dr. Price inquired if any examination of the condition of the gall-bladder and duct had been made at the time of operation. Was the jaundice due to mechanical obstruction or to the general condition?

Dr. Baer at first thought an error had been committed in not operating at first, when the diagnosis was made and the tube ruptured; but the full history puts the matter in a different light, and would cause great hesitancy about rushing in in a similar case.

Dr. O'Hara had made his diagnosis at the time of the accident. Operation could not have been performed then on account of the collapse, and after that passed away it did not seem called for until the time of its performance. One question has arisen in his mind from the subsequent history of the case. Would it not have been better if the wound had been packed from the time of the operation?

SÄNGER'S CÆSAREAN OPERATION.

Dr. Robert P. Harris said: I desire through this Society to give publicity to the following statement, received a few davs ago in a letter from Dr. Sänger, of Leipzig, by which it will be seen that his method now stands unrivalled in the world, in its ability to save human life. Locally considered, the Porro operation, as performed in the Santo Caterina Hospital of Milan, Italy, has until recently far exceeded in its proportionate success all other Cæsarean methods in any hospital or country but this; the best of all Porro successes, has now to be rated second, as compared with its younger German rival. Laparo-elytrotomy, a year ago, stood upon the same level with the Sänger operation in its rate of success; but now the latter far outstrips it in the number of times it has been performed, and in its proportion of cures. According to Dr. Sänger's letter, his operation, with its modifications and simplifications, has been employed twenty-five times, saving eighteen women, or seventy-two per cent., and resulting in

twenty-two children being delivered alive, or eighty-eight per cent. In these are included three fatal American cases, which, if not in an absolutely hopeless state before the operation, gave a very minimum hope of success. The European twenty-two operations saved eighteen women, or 81$\frac{9}{11}$ per cent. In the Maternity Hospital of Leipzig, Dr. Sänger has operated four times, Dr. Obermann once, and Dr. Donal once, saving all of the women and children; in but one woman was there any special trouble after the operation. Dr. Leopold, of the Dresden Maternity Hospital, has operated nine times and Dr. Korn once; the former lost one woman; all of the children were saved. Thus we have fifteen women and sixteen children saved under sixteen operations, a mortality for the former of only 6¼ per cent. Of the four deaths in Europe, two resulted from septic poisoning which existed at the time of the operation, and in the other two subjects it followed it.

Dr. Sänger has such confidence in his method from the success that has attended it in Germany, that he believes the time has come when it should be preferred to craniotomy, because of its moderate fatality, and its saving the child. We should be glad if all of the Cæsarean operations of the United States should be performed after Sänger's method as simplified by Garrigues and Leopold, but we must not expect very happy results here until our accoucheurs become alive to the fact that delay in operating will make any method fatal in a large proportion of cases. In no country are the capabilities of the old Cæsarean operation greater than in the United States, and in few has this form of delivery been of late more uniformly fatal. To find eighteen recoveries under it we must search backward to January, 1863, and through a record of time covering more than twenty-three years, in which period seventy-three operations have been performed, proving fatal in about seventy-five per cent. This occurred notwithstanding an established fact that a set of early operations will save seventy-five per cent. of the women, and still higher of the children, of the United States.

TAIT ON FARADIZATION.

DR. R. P. HARRIS also presented the following letter from Mr. Lawson Tait, of Birmingham, dated April 18, 1886: "I have very strong objections to the proposal to treat cases of extra-uterine pregnancy by faradization. In the first place, the diagnosis of these cases must always be haphazard; that is to say, a correct diagnosis will not be made probably more than once in three times; the result will be that all such cases will be dealt with mischief only, and I venture to predict that this treatment will be dropped, as all such treatments are, without explanation of the case, in a very short time. My greatest objection is, that supposing the fœtus has passed through the stage of tubal rupture and remained alive, what right have you to murder that child? If it goes on to the full time it may be delivered alive and the woman will have a chance of recovery from the operation far greater than with the faradization treatment of destroying the child. The cases, according to my experience, which recover from the operation are about six out of seven.

"Every one who has had much experience with pelvic tumors must have seen a certain number of cases where the fœtus has died between the fourth and sixth months, and where, after a prolonged course of suppuration, it comes out through the rectum, bladder, etc.; these are, of course, the cases where the tubal rupture has taken place into the broad ligament on the left side. I have seen one right-sided case going into the bladder. It of course killed the patient.

"In the whole course of my life I have only known of one case where the woman has carried an extra-uterine pregnancy for a number of years after the death of the fœtus. We know with perfect certainty all about this case, and for about eighteen years she has carried, on the left side, a condensed ovum of extra-uterine pregnancy. I doubt very much if there could be found in the whole world three other such cases; whereas the number of cases who die or who have prolonged illnesses after the suppuration and discharge of the fœtus is, even in my own experience, very great."

In closing his letter Mr. Tait writes: "I wish you would make this opinion of mine known on your side."

In reply I will state: 1. We do not, in this country, practice electrolysis in cases of extra-uterine pregnancy. No puncturing needles are used, and the electro-magnetic current will not endanger the life of the patient any more if the growth to be acted upon is a tumor, than if it be as presumed, an ectopic fœtal cyst. The experience of seventeen years in the United States, in which no fatal result is believed to have taken place, has only tended to establish this fœticidal method as a valuable means of saving women when in great danger of death from rupture of the fœtal cyst and internal hæmorrhage.

2. We do not propose to act upon the fœtus after it has escaped into the abdominal cavity, unless the fœtus should be very small, and be easily accessible to the pole of the battery placed in the vagina. We cannot see that it is any more a murder to destroy a two or three months old fœtus after it has escaped from a Fallopian tube by rupture, than while it is still in it. The chief objection lies in the fact that such an ectopic fœtus will be much more likely to give trouble after its destruction than one that is securely enclosed in a sac from which the amniotic fluid shall have been absorbed. It is true that an abdominal fœtus may be delivered alone at term, if permitted to live; but it is not correct to estimate the risk of such an operation as lower than faradization properly performed, for it is far higher. Primary laparotomy, as far as we know of the operation, has been fatal in fifteen out of nineteen cases.

It is not proposed in this country to operate by faradization upon fœtuses of from four to six months. Dr. T. G. Thomas has, it is true, proposed to make the limit 4½ months, but the general impression is, that fœticide is much safer immediately and remotely if done in the second and third months, when fœtal ossification is very incomplete. The entrance of fœtal debris into the bladder is not necessarily fatal, as in the case related by Mr. Tait, for Parry refers to nine cases, four of which recovered.

Mr. Tait appears not to be aware of the fact that cases of prolonged ectopic gestation have been comparatively numerous, as witness the following partial record.

1. Nebel reports the case of a woman of 91, who died in 1767, and in whose body a fœtus was found, that she had carried fifty-five years (Campbell on extra uterine pregnancy, 1840, page 45).

2. Brandt records one of a women of 80, who died in 1858, after carrying a fœtus for fifty-six years, and bore two children while it was still in her abdomen. (Ranking's abstract, 1863, vol. 1, page 216).

3. Parkhurst reports one of a women of 77, who carried a fœtus fifty-two years (British and Foreign Med. Chi. Rev. 1856, vol. 1, page 271).

4. Chiari gives a case of a patient who died of pneumonia when 82, who carried an eight months fœtus for fifty years (Lancet, Lond., 1876, vol. 2, page 141).

5. Conant's case was a woman of 63, who died in June, 1863, after carrying a fœtus thirty-five years (New York Med. Jour., May 1865).

6. Majon found in a woman of 78 a calcareous fœtus computed at three month (Cruveilhier, Essais sur l' Anatomie Pathologique, Paris, 1816, tome 2, page 130).

7. Mangin and Vernier found two fœtuses in the body of a women of 74, which she had carried thirty-three years (Jour. de Medicine, 1786, Gaz. Méd., July 29, 1837.

8. Morand also found a three months fœtus in a woman of 78; she had carried it thirty years (Mem. de l' Acad. Roy. des Sciences, 1748).

9. Kristian Grön found a three months fœtus in a woman of 49, which had been carried eighteen years (Norsk Magazin for Lægevidensk, Band xvii, Haft. 2.)

10. Johannis Ambosi (1582) reported a case of a woman of Sens, who carried a fœtus twenty-eight years. (See Astrue, Traité des Mal. des Femmes, Paris, 1765 tome 4, page 78).

11. Campbell reports the case of a woman of 75, in whom was found a fœtus that had been carried thirty years; a fœtus of about two months was also found. (C. on Extra-uterine Gestation, Edin., 1840, page 55.

12. Pepper relates the case of a patient of fifty-three, married twenty-seven years, in whose body Dr. Loder found two fœtuses, one carried twenty-three years (Trans. Patho. Soc., Phila. 1866, page 102.)

13. Francis Boyle removed an 8 pound fœtus after the death of a woman, of Toulouse, that she had carried twenty-six years (Philos. Trans. Abrid., London, 1794, vol. 3, page 222).

14. Cruveilhier in his Anatomie Pathologique, gives a plate representing a calcified fœtus which had been carried many years.

15. Œlinger reports the case of a woman who carried a six and one-half months fœtus about fifteen years (Prog. Méd. Paris., 1884, vol. 12, page 196).

16. Johnson's case, aged 68, carried a fœtus fourteen years, after which she discharged fœtal remains at intervals during thirty years (Med. Times, Lond., 1872, vol. 1, page 655).

17. Leinzell in 1720 removed from the body of a woman of 49, a fœtus that she had carried for forty-six years.

18. Watkins examined a woman of 74, who died of kidney disease, Jan. 13, 1866, and removed a fœtus which she had carried for forty-three years (Brit. Med. Jour., March 3, 1866.

19. Van Sweiten also records the case of a woman of Lyons who died at 68, and had carried a fœtus for twenty-seven years (opus cit.).

20. Fabri, of Ravenna, found in a woman of 55, a fœtus she had carried for some years. The pregnancy was her fifth, and she bore two children at later periods (Brit. Med. Jour., March 7, 1863).

Many more cases of the same character might be added to this list, some of which would go to show that an extra-uterine fœtus may prove fatal by purulant disintegration and pointing after twenty years or more. Even an ectopic fœtus of three months may cause perforation of the rectum and possibly a fatal issue, although this is a rare result, it will be noticed, that in three of the twenty-one cases the fœtus was computed at three months, and in another, a second fœtus was of two months.

Dr. O'Hara exhibited a

FIBRO-CYSTIC TUMOR OF THE UTERUS

removed after death from a patient, æt. 53 years, who had carried it for over twenty years. Three years after it was first observed she applied to Dr. Atles for relief by operation; but he declared and recommended that it should be left alone. The tumor contained numerous small cysts, and measured 39½ by 34 inches in circumference, and weighed 30 pounds. The peritoneum was ¼ inch in thickness and was of a yellowish color.

Dr. Parish remarked that the tumor had formed no adhesions with the exception of a few slight ones to the omentum, and the removal of the ovaries and tubes would have been feasable at any time. Both tubes were dilated and in a condition of hydro-salpinx. The tumor sprung from the fundus uteri; the cavity measuring only 4 inches. The tubes and ovaries had remained at their normal position in relation to the uterus, but had been elevated out of the true pelvis. The vagina had been stretched upwards, as also had been the uterine body and neck. The uterus below the fundus had diminished in size to about that of the index finger. The bladder by reason of the traction upward had lost its attachments to the uterus, and merely retained posteriorly its attachment to the vagina, ordinarily the extent of the attachment of the bladder to the uterus becomes greatly increased in large uterine fibroids. In the specimen submitted supra-vaginal amputation of the uterus with the tumor could have been effected with out separation of the bladder from any of its attachments.

It is interesting to observe the condition of bilateral hydro-salpinx some six years after the menopause. The patient died with acute symptoms of vomiting and purging of dark fluids containing probably blood extravasated through the intestinal walls. At the autopsy no indications of perforation of the intestine were apparent. The patient was able to engage in active work until a few days prior to death,

and hence the double hydro-salpinx could not have occasioned prouounced symptoms.

Dr. William Goodell read for DR. HIRAM CORSON, of Conshohocken, a paper

ON THE STATISTICS OF 3,036 CASES OF LABOR.

In the "Transactions of the Medical Saciety of the State of Pennsylvania" for 1863, may be found an article headed "Midwifery in the Country," in which are drawn statistics from 2,387 consecutive cases of labor, to which are now added 649 cases, making in all 3,036 cases with 3,087 children. Head presentations (vertex), 3,012; breech, including knees and feet, 58; shoulder and arm, 5; face, 12. Twins in 51 cases. Ergot was used in 139 cases in first series. Forceps were used twenty-eight tiines in the first 2,387 cases and thirty-one times in the last 649 cases. Version was performed twice in the last series. One primipara was 52 years of age. Puerperal convulsions in eight cases; all recovered. There was a total of 190 cases in which the children were born before the doctor arrived, and in which the mothers did well under nature's management, and were saved the fright and suffering which, if Credé had been present, would have resulted from his fears of hæmorrhage, his rush of one hand into the vagina the moment after the child was born, and the grasping, squeezing and forcing down of the womb by the other hand on the tender, sore abdomen, to say nothing of having that heavy hand pressing on a tight bandage for two hours more, in accordance with regulation orders.

In the practice of this art I have not followed the requirements of the times. I have considered labor a natural process, and that my duty consisted in awaiting the action of the patient's forces; not setting them aside and myself usurping the duties which the natural efforts would have performed without difficulty; but coming to my patient's aid only when her forces seemed inadequate to the performance of their duties.

I have learned that the forceps are used very often —many, many times oftener in proportion to number of cases than twenty years ago, and that this is done in the early part of the labor; not because nature is inadequate to the work, but because as the physician had never hurt *himself* by using the instrument and wished to get away speedily, as he had other patients who needed attention; and though the condition of the lying-in woman would well have permitted him to visit his other patients and return in time to aid her if she needed aid, still he would not do it, through fear that the child might be born in his absence or some other doctor be called in his place. The graduate of a month can never use the forceps and all the other swift, sure means of speedy delivery, without hurting his hands or spraining his back; of course the sufferings and fate of the woman were of secondary importance. Being anxious to learn all about the advances in midwifery, I attended the meeting of the American Gynecological Association in Philadelphia, a few years ago. There I heard from the mouth of more than one eminent gynecologist—men greater than midwives—"Every year I use the forceps more frequently than before." There, too, I was amazed to learn, from the experience of these speakers, how common were the cases of laceration of the cervix and perineum; so numerous, indeed, that when coupled with the fact that the advocates of frequent use of the forceps were teachers of midwifery and also eminent surgeons, skilful to "repair" these lacerations, and that these repairs brought large remunerations to the surgeons, I was dazed, I knew not what to say. I could not believe it possible that the earnest gentlemen before me could have conspired to teach this rushing plan of delivery in order that lacerations should be produced, so that the business of repairing should be brisk and profitable. It was pleasant, a few months later, to hear that the eminent gynecologist Dr. Goodell attributed the great increase of lacerations to the use of the forceps, and earnestly denounced their indiscriminate employment.

In October, 1880, the *Boston Medical and Surgical Journal* contained an article by J. W. Elliott, M.D., on "Antiseptics in Gynecology," with full directions for their use in obstetrics to prevent puerperal fever by destroying poisonous germs which might be introduced by the doctor or nurse. "At the beginning of labor the patient should have a hip-bath, the hair should be shaved from the genitals, the vagina and vulva should be washed with soap and disinfected with carbolic acid. During labor every examination should be preceded by a vaginal injection of a 3 per cent. carbolic solution to prevent the examining finger carrying germs lodged at the vulva or in the vagina up to the uterus (which is about to be more or less lacerated.) After delivery the uterus and vagina should be considered as a deep and important wound which may heal by first intention, or in which the secretions may stagnate, become putrid and be absorbed." As I had never before heard of Dr. Elliott I went on in my usual way, taking no razor to shave the parts, no syringe, no carbolic acid, but let nature go on with her work, pleased to see how steadily and perfectly she accomplishes it. Dr. Corson asks, Is labor a natural process? Are antiseptic solutions, when thrown into the uterus and vagina, safe? and answers these questions from the standpoint of his own experience and by quotations from Albert H. Smith's lecture "On the Relation of Cleanliness to the Prevention of Puerperal Septicæmia;" Dr. W. O. Stillman's account of the precautions taken by Carl Braun, of Vienna, to prevent infection in the lying-in room; Dr. T. G. Thomas, of New York, a paper read before the New York Academy; Dr. George J. Harrison, in reply to Dr. Thomas; and to papers by Fritsch and Kustner, and gives his own experience in his first labor case in 1827. Dr. Corson next considers the forced delivery of the placenta, and claims the originality of the Credé method in its principal details for Professors James and Dewees, the latter saying that it had been long since recommended by Monsieur Dassé, of Paris. He criticizes the unnecessary severity of the latter part of the Credé method and much prefers the directions given by Prof. Penrose, and then details his own method, which leaves more to natural powers,

giving morphia if rigid contraction of the os occurs before the placenta comes away.

He recommends venesection to the extent of ten or twenty ounces to relax a rigidly contracted os in the first stage of labor. If this is not immediately successful he gives morphia internally. He uses ether to relax when pains are too severe.

Dr. Corson next considers the question of tying the cord. Should it be tied at all? How soon after birth should it be divided? What is gained by waiting until pulsation ceases in the cord? These are questions to which careful consideration has been given and which are fully answered. Dr. Corson does not use a binder; has not done so for twenty years. He does not think that it prevents relaxation of the uterus, but that it favors prolapse of that organ. He gives his own experience and fortifies it by that of several other physicians.

He thinks the hasty extraction of the placenta, the compression of the uterus by the hand, and the application of the binder with the avowed intention of preventing hæmorrhage, have a bad mental effect on the patient and predispose to the very trouble we are seeking to avoid. He gives several instances of mental influences in stopping hæmorrhage. He has never used hot water, vinegar, lemon or ice in the uterus for flooding, but has applied ice externally.

Puerperal convulsions, ten cases, all recovered. His treatment consists largely in free venesection, cold water poured over the head, and morphia internally. He recommends the handbook of Dr. Ezra Mechener for the successful treatment of this malady. He would also avert convulsions by bleeding before labor to relieve headaches if accompanied by congestion of the face. Of puerperal or septicæmic fever he knows nothing, having never seen it.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Mycosic Nature of Tuberculosis, and the Parasitic Evolution of the Furfuraceous Microspore—Toxicity of Urine Different in Waking and Sleeping Hours—Toxicity of Febrile Urine.

At a recent meeting of the Academy of Medicine, Dr. Duguet read a note on some researches that he had made in conjunction with Dr. Héricourt, on the mycosic nature of tuberculosis and the parasitic evolution of the furfuraceous microsporon. These authors noticed the existence of pityriasis versiculor on the chest and abdomen of patients who died tuberculous. At the post-mortem examination the lungs were found to contain spores, myceliæ and granulations of the furfuraceous microsporon, which led the authors to conclude that there existed a form of pulmonary tuberculosis which bears a relation to pityriasis. Experiments with the cultures of the microspores of the skin and those of the lungs produced results absolutely comparable. On several occasions insufflations of the pityriasic scurf were practised in the tracheæ of rabbits. These rabbits wasted away and became tuberculous, which was verified on killing the animals.

On continuing their researches the authors found the same spores and the same myceliæ in the sputa of tuberculous patients taken indiscriminately. Moreover, they discovered that the sputa in which these organisms were found to be the most numerous were equally those which contained the most bacilli, and that the sputa that did not contain microspores did not either contain bacilli. They further discovered that the bacilli were only one phasis of the development of the microsporon, and that the presence of bacilli is not necessary to characterize the existence of tuberculosis. Bacillary phthisis must, therefore, be considered as being only one of the forms of microsporic phthisis a great deal more generalized. These researches are susceptible of a great number of applications relating to the prophylaxis of tuberculosis. Pityriasis versicolor is frequent in debilitated tuberculous patients, it is often the cause of intestinal tuberculosis. These researches also concord with the opinion of those who think that the question of the soil dominates the question of the bacilli.

About a month ago, Dr. Bouchard, Professor of Pathology and General Therapeutics at the Paris Faculty of Medicine, read a paper at the Academy of Sciences in which he endeavored to show that the toxicity of the urine while a person was awake differed in quality and in intensity from that of a person during sleep. He then explained that these differences did not depend on the nature of the food nor upon the hours of meals, and that they are not in relation with the quantity of potash eliminated. For, wishing to complete his demonstration and to determine some other circumstances which, in a physiological state, increase or diminish the toxicity of the urine, Dr. Bouchard instituted a series of experiments permitting him to study the variations of the toxicity of the urine at the different hours of the day, without these differences being, in any way, imputable to the food taken. With this view, the day of twenty-four hours being divided into three periods of eight hours, he got the subject to take, at the commencement of each period, a repast always identically the same in the nature and in the weight of the food and of the drink. These experiments showed that the total amount of the urine during these three periods, viz.: sleep, the hours of being awake in the morning and those of the evening, which may be indicated, on an average, by the numbers 3, 7, 5. The augmentation of the production and of the elimination commences at the moment that the subject falls asleep, the diminution of the elimination commences in the middle of the period of wakefulness.

To ascertain the effects produced by abstinence on this toxicity, Dr. Bouchard went through another series of experiments which formed the subject of another paper which he read at a subsequent meeting of the Academy of Sciences. The author states that he suppressed the repast at the commencement of one of the periods of sleep, and he compared the total toxicity of the urine secreted during that period with that secreted during the same period, and in

which he allowed the regular ration. He arrived at a result which at first sight seemed paradoxical, inasmuch as the abstinence increased by half the toxicity of the urine. This fact was explained as follows: A person reduced to live at the expense of his own substance destroys with greater difficulty and more incompletely living matter; whereas in the conditions of normal alimentation, he burns more easily and more completely the circulating material. The question is asked, what becomes of this toxicity under the influence of a day's corporal exercise of great activity, out in the country, and in the open air? Dr. Bouchard ascertained that it diminishes about one-third.

The author concluded his paper with the statement that in these physiological conditions, viz.: normal alimentation, abstinence, sleep, wakefulness during rest, wakefulness during muscular activity, the variations of toxicity appear to depend particularly on the more or less greater intensity of oxidation.

In connection with the subject of the toxicity of the urine in physiological conditions, I may here make a note of a paper read by M. Felz on experiments performed by him to ascertain the toxic power of febrile urine. The experiments were performed with human urine of subjects suffering from typhoid fever, scarlet fever, acute tuberculosis, pneumonia, and acute articular rheumatism, which the experimenter injected into the venous blood of dogs. The results obtained were as follows: The so-called uræmic accidents, from the first efforts of elimination followed or not by effects indicating nervous, convulsive, toxic or clonic phenomena, leading always to coma and nearly always to death, are manifested much more rapidly than when normal urine is employed. These phenomena are produced with urine in doses far inferior to those which would have been necessary if the experiments were performed with normal urine. The doses of intoxication are two-thirds or half inferior to the doses of intoxication of normal urine, and correspond to the volume of urine secreted by the dog in twenty-four hours at the minimum, or forty-eight hours at the maximum. The author adds that the toxic power of febrile urine is far from obeying the law of proportionality of densities. He found that there existed in pathological febrile urine agents of toxicity which are not found in normal urine, or which are represented in the latter only by quantities relatively very feeble.

A. B.

DOMESTIC CORRESPONDENCE

CREMATION.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—Your editorial explanation (page 98, July 24, 1886), as to the present status of the subject of *Cremation* before the American Medical Association, is certainly correct. Dr. Keller's resolution, as cited, was thoroughly discussed in the Section of State Medicine and proved too extreme, at that time, for the small number of Sanitarians present at the discussion. I offered a resolution to the effect "That Cremation was the most certain and feasible method of preventing possible infection from dead bodies." This resolution was the direct conclusion from the article I had read before the Section under the title of, "Purified as by Fire." The final outcome of the discussion was that a committee (as you state) was appointed to investigate the subject still further, and report to the Association next year. The weakest point in the logic of such a conclusive resolution as Dr. Keller's seems to be—Have we sufficient facts to prove *the infective power of dead bodies*, and, *the poisonous influence of neighboring graveyards.*

As a member of the Committee I would be pleased to receive information from any member of the American Medical Association, as to any such *facts* within their own knowledge. Respectfully

G. S. FRANKLIN, M.D.

Chillicothe, Ohio, July 26, 1886.

MISCELLANEOUS.

THE MISSOURI STATE BOARD OF HEALTH AND MEDICAL COLLEGES.—At a meeting of the Missouri State Board of Health on July 12, the following resolution was passed:

Resolved: That in future a percentage of graduates to matriculates of forty-five (45) or over, will be grounds for refusal of registration of diploma and issuing of certificate to graduates of a school otherwise in good standing; provided, however, that before such action is taken by this Board, the said school whose diploma is presented for registration, shall be notified and an opportunity be given the faculty thereof for satisfactory explanation to the State Board of Health.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 17, 1886, TO JULY 23, 1886.

Col. Glover Perin, Surgeon, leave of absence extended one month. (S. O. 165, A. G. O., July 19, 1886.)

Major Wm. H. Gardner, Surgeon, granted four months' leave, to take effect Aug. 10, or as soon thereafter as his services can be spared. (S. O. 165, A. G. O., July 19, 1886.)

Major Calvin DeWitt, Surgeon, assigned to duty at Ft. Sully, Dak. (S. O. 66, Dept. Dak., July 14, 1886.)

Capt. Richards Barnett, Asst. Surgeon, leave of absence extended six months on surgeon's certificate of disability. (S. O. 162, A. G. O., July 15, 1886.)

Capt. J. J. Kane, Asst. Surgeon, ordered from Ft. Ringgold, Tex., to Ft. Hancock, Tex. (S. O. 85, Dept. Texas, July 13, 1886.)

Capt. Wm. F. Carter, Asst. Surgeon, ordered from Ft. Concho, Texas, to Ft. Ringgold, Texas. (S. O. 85, Dept. Texas, July 13, 1886.)

Capt. Jno. M. Dickson, Asst. Surgeon, ordered from Alcatraz Island, Cal., to Ft. Mason, Cal.

Capt. Jno. J. Cochran, Asst. Surgeon, ordered from Ft. Mason, Cal., to Presidio of San Francisco.

Capt. A. J. Gibson, Asst. Surgeon, ordered from Ft. Winfield Scott, Cal., to Alcatraz Island, Cal., on return from leave of absence. (S. O. 56, Dept. Cal., July 8, 1886.)

First Lieut. Wm. O. Owen, Jr., Asst. Surgeon, ordered for duty at Ft. Schuyler, New York Harbor. (S. O. 84, Div. Atlantic, July 15, 1886.)

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, AUGUST 7, 1886. No. 6.

ORIGINAL ARTICLES.

DISEASES AND DEATHS OCCURRING IN THE MEDICAL SERVICE OF JOSEPH JONES, M.D., 1869–1886,

IN THE CHARITY HOSPITAL OF NEW ORLEANS, LA.

WITH PRACTICAL OBSERVATIONS.

(*Concluded from page 119.*)

CONTAGIOUS AND INFECTIOUS FEVERS AND DISEASES.

	Cases.	Deaths.
Dengue	15	
Yellow fever	76	35
Typhoid fever	16	3
Measles	10	2
Scarlatina	4	1
Diphtheria	2	
Mumps	3	
Small-pox	18	1
Asiatic cholera	2	2
Total contagious and infectious fevers and diseases	146	44

Percentage of deaths in contagious and infectious fevers and diseases, 30.1.

Ratio of deaths in 1000 cases of contagious and infectious fevers and diseases, 301.

One death from contagious and infectious fevers and diseases in 3.31 cases.

PHTHISIS PULMONALIS.

Cases, 413. Deaths, 122.

Percentage of deaths in phthisis pulmonalis, 29.5. One death in 3.38 cases. On examination, the mortality records of New Orleans will show that phthisis does not confine its ravages to more Northern cities, but is the cause of an alarming mortality even amongst the natives (creoles) of New Orleans.

About one-tenth of all the deaths occurring in New Orleans are due to phthisis pulmonalis.

Thus the total deaths in New Orleans during thirty-six years, 1844 to 1880, was 242,426, and of this number phthisis caused 24,071. During the period just specified (1844–1880, thirty-six years) the principal diseases occasioned the following number of deaths, as shown by the following table:

DEATHS IN NEW ORLEANS FROM SOME OF THE PRINCIPAL DISEASES DURING A PERIOD OF 36 YEARS—1844–1880.

Diseases.	Deaths.	
Cholera (Asiatic)	11,847	
Cholera morbus	889	
Cholera infantum	2,408	
		15,144
Enteritis	6,915	
Diarrhœa	8,289	
Dysentery	7,097	
		22,301
Phthisis pulmonalis		24,071
Small-pox, scarlet fever and measles	9,381	
Dengue, typhus, typhoid fever, cerebro-spinal fever and simple continued fever	5,932	
Yellow fever	28,739	
Various forms of malarial fever	12,416	
Total fevers		56,468
Grand total deaths caused by the preceding diseases		117,984

Whilst fevers of all varieties destroyed, in the city of New Orleans, 56,478 citizens in thirty-six years, yellow fever destroyed only about one-half this number, namely, 28,739 citizens in thirty-six years; and notwithstanding that, only about one-half of the mortality from fever in New Orleans during the period specified was due to yellow fever. The attention of the citizens of the entire Mississippi Valley is directed to this disease. Congestive fever alone destroyed in New Orleans, during thirty-six years, 6,337 persons; phthisis pulmonalis destroyed nearly as many citizens as yellow fever, namely, 24,071; enteritis, dysentery and diarrhœa, 22,301; and cholera, cholera morbus and cholera infantum, 15,144. Total deaths from phthisis pulmonalis and bowel affections, 61,516.

Those diseases which are common to the entire Valley caused 61, 516 deaths, excluding those caused by fevers, 56,478. Fevers, bowel affections and phthisis pulmonalis caused in New Orleans 117,994 deaths in thirty-six years, out of a total deaths from all causes 242,426.

The statistics afforded by the Charity Hospital of New Orleans are no less instructive. During a period of eighteen years preceding the American civil war—1842–1860—there were treated in the wards of the Charity Hospital of New Orleans 5690 cases of phthisis pulmonalis, of which 3084 terminated fatally; giving 54.1 per cent. mortality. During the seventeen years following the civil war there were treated in the Charity Hospital 5251 cases of phthisis pulmonalis, of which 2525, or 40.8 per cent., died. During a period of thirty-eight years—1842–1880—10,950 cases of phthisis pulmonalis were treated in the wards of the Charity Hospital, 5669, or 51.2 per cent. of which terminated fatally.

Whilst the statistics of the Charity Hospital refer chiefly to the laboring classes, and to those who have been reduced in their circumstances by misfortunes and disease, at the same time we have shown that

the statistics of the city at large illustrate to an equal extent the destructive effects of the insidious disease.

During a period of years extending from 1845 to 1881, the deaths from phthisis pulmonalis have, with the exception of a single year, annually exceeded half a thousand, and in many years have been more than eight hundred. During ten years—1845–1858—(the records of those years which were imperfect being, as in all other estimates, excluded), the deaths from phthisis pulmonalis in New Orleans numbered 6367; during ten years—1859–1869—7251; during eleven years—1870–1881—9016; we have thus, during a period of thirty-one years—1845–1881—a grand total of 22,958 deaths by phthisis pulmonalis.

Surely a disease which steadily claims its victims each year, which in any long series of years has been as destructive as the dreaded yellow fever, should secure the earnest consideration of those charged with the sanitary affairs of this and other cities.

The epidemic of 1878 threw the professional minds of a certain order into a state of morbid excitability on the subject of yellow fever, and the public has been scared with numerous lucubrations on the subject, and quarantine, and the National and State Legislatures have been repeatedly and freely plied with advice and urged to provide money and places for the self-constituted guardians of public health and foreign and inter-State commerce. In comparison with phthisis pulmonalis, which every year destroys its thousands and tens of thousands in every State in this Union, yellow fever should be regarded only as a casual and minor disease, visiting only certain limited portions of the tropical and temperate regions, at long intervals. We hear much of the cost of epidemics, but nothing as to the fearful cost of such a disease as phthisis, which holds its doomed victims in deadly embrace for months and even years, and inflicts, in addition to indescribable tortures, vast, serious pecuniary expenses.

I have given stern facts, with the design of arousing the attention of the medical profession to some of the prominent causes of this disease, and have ventured to suggest some modes of prevention. The necessity of personal and domestic sanitation should appeal to all alike. The people may escape the yellow fever by leaving the infected places, but they cannot escape those causes of disease which spring from the habits, mode of living, and climate, and which are ever present with them, in their assemblies, counting-houses and dwellings, around their firesides and in their beds, devoted to quiet and rest. The chief causes of the prevalence of phthisis pulmonalis in New Orleans appear to be:

1. Imperfect drainage.
2. The saturation of the atmosphere with moisture.
3. Imperfect construction of houses.
4. Imperfect ventilation of houses.
5. Crowding.
6. The neglect of regular exercise for diversion and recreation.
7. Imperfect nourishment.
8. Hereditary taint.
9. Imperfect warming and drying of the houses by fire during the winter months.
10. The wearing of insufficient clothing during the the winter months.

A volume might be written on the preceding causes, but our object is clearly to present practical observations which may prove of benefit to those interested.

Owing to the peculiar topography and geographical situation of New Orleans, the soil is saturated with moisture, and the atmosphere is habitually near the dew point. The *old* city (second district, bound by Esplanade and Rampart streets), and large portions of the third, fourth and first districts, are compactly built with brick, and the sudden changes of the fall, winter and spring are frequently manifested by the precipitation of moisture on the cold walls in the form of streams of water. Dampness checks the cutaneous perspiration; it abstracts the normal heat and electricity from the body; it receives and holds the noxious exhalations from the human body, and from all other sources, and it promotes the development and rapid multiplication of low or simple forms of vegetable and animal life, and more especially of micrococci bacilli, bacteria, and fungi.

In many instances no attention has been paid to the proper filling in, with sand and gravel, of building lots, and stagnant water frequently stands under the houses, and is a potent source of disease. Whole blocks can be pointed out in the heart of this great city in which there is no proper ventilation, and in which the lowest floor rests directly upon the damp earth. Houses, churches, school-houses, stores, and all buildings inhabited or occupied by human beings, should be thoroughly ventilated laterally and perpendicularly. As far as practicable the respired air should be diluted and as far as possible robbed of its noxious properties. The air should circulate freely under the lower floor of every house, and should be admitted by ventilation in the front and rear of each room, and if possible on all sides; and a system of ventilation should be so arranged as to allow of the escape of the foul air of the sleeping apartment directly up through the roof. Each room should have a direct supply of fresh air from the outside. *If people would send for the carpenter and properly ventilate their houses, they would not so often need his services in the grave-yard.*

The effect of imperfect ventilation and close confinement and crowding, with insufficient food, is fully illustrated by the frequent occurrence of phthisis pulmonalis among females who are compelled to live by the needle and sewing machine, and who occupy small unventilated houses resting upon the ground.

Warm clothing, regular exercise in the open air, nutritious food, and such thorough ventilation as shall at all times secure pure air in the store, work-shop, sitting room and bed room, are the great means of preventing the development of phthisis pulmonalis. War destroys its thousands, but phthisis claims its tens of thousands.

The improvidence, ignorance and avarice of mankind, as manifested in the neglect of sanitary laws, in the construction and conduct of dwelling houses, stores, factories, school houses, and churches, are more destructive to human life than yellow fever and all other pestilences.

TREATMENT OF PHTHISIS.

In hospital practice amongst charity patients, the results of treatment will depend upon the stage of the disease; the extent to which the lungs and other organs have been involved by the tubercular deposits; the constitution of the patient; the habits and condition of the patient before the onset of the disease; the cause of the disease, the absence or existence of *heredity*. The experience of the author is to the effect that good results may be achieved in almost all cases, and that the progress of the disease may frequently be temporarily arrested.

The remedies of greatest value appear to be cod-liver oil, phosphates, hypophosphates of zinc, iron, sodium, potassium, strychnia, and the bitter tonics.

Throughout the entire term of hospital service cod-liver oil maintained its place at the head of the list of the remedies adapted to the treatment of phthisis. The following combination was found useful as a tonic: ℞. Tincture of nux vomica, f ℥iv; syrup of hypophosphates of iron, lime, soda, potassium, f ℥viij; mix; dose, one teaspoonful three times a day.

To allay cough the following formulas were frequently used: ℞. Syrup of morphia (one grain of sulphate of morphia to one fluid ounce of simple syrup), f ℥ij; syrup of squills, f ℥i; syrup of ipecac, f ℥iv; syrup of tolu, f ℥iiss; dose, from one to two fluid drachms when necessary. ℞. Syrup of morphia, f ℥ij; syrup of squills, f ℥i; syrup of prunus Virginiana, f ℥iv; mix; dose, from one to three fluid drachms when necessary.

Alcoholic stimulants administered in a diluted state, with cane sugar, proved beneficial in arresting the waste of tissue.

When good whiskey is diluted with four parts of sweetened water in many cases it acts as a nutriment and anæsthetic, allaying the cough and inducing sleep.

SOUTHERN RETREATS, OR HOSPITALS, FOR THE ACCOMMODATION AND TREATMENT OF CASES OF PHTHISIS PULMONALIS.

The Southern region of Louisiana, on the East bank of the Mississippi, beyond the borders of Lake Pontchartrain, the adjoining *Pine Belt* above the coast of Mississippi, presents a very mild climate, well adapted to the accommodation of persons from all sections of the United States, but more especially from the Northern or Western States, who are suffering with phthisis. The atmosphere of the Gulf, immediately along the borders, is too stimulating to the bronchial mucous membranes in many cases of phthisis pulmonalis; and the Delta of the Mississippi Valley affords too much moisture, and is the seat of too much fog and rain, to afford satisfactory results in the treatment of phthisis.

The belt of country around Covington, and the Abita Springs, across the Lake from New Orleans, is composed chiefly of sand, and is covered with the long-leaf pine. Owing to the porous nature of the soil, no water lies after rains; the atmosphere is comparatively dry, and the balsamic properties of the pine are exhaled.

There are statistics to show that the death rate from phthisis in this Pine Belt of the Florida parishes of Louisiana is lower than that of any other portion of the United States. I have sent many patients suffering with phthisis to this region, and have for many years advocated the founding of retreats or hospitals for the treatment of this disease in this portion of Louisiana.

My colleague, Prof. Payne, of Galveston, Texas, has suggested that convalescents from the Charity Hospital, and especially those suffering with phthisis, might with benefit to the patients and to the institution, be transferred to a hospital located in a healthy region, outside of the limits of the Parish of Orleans. Assistance might be rendered in the support of such an institution by the labor of the patients in cultivating flowers, vegetables and fruits.

GENERAL DISEASES, CONTINUED.

	Cases.	Deaths.
Elephantiasis Græcorum (Oriental leprosy)	5	3
Elephantiasis Arabum	3	
Zaros (African)	1	
Scrofula	14	3
Scurvy	7	
Purpura hæmorrhagia	8	
Total	38	6
Medullary cancer	2	
Epithelial cancer	1	
Osteoid cancer	2	2
Schirrus cancer	2	
Cancer of the uterus	1	
Cancer of the stomach	1	1
Cancer of the pylorus and pancreas	1	1
Cancer of the liver	2	2
Cancer of the testicle and mesenteric glands	1	1
Cancer of the rectum	1	
Cancer of the tongue	1	1
Cancer of the penis	1	
Total	16	8
Erysipelas	19	2
Acute articular rheumatism	152	2
Chronic articular rheumatism	157	2
Muscular rheumatism	17	
Gonorrhœal rheumatism	6	
Syphilitic rheumatism	30	
Gout (chronic)	1	
Primary syphilis	34	
Secondary syphilis	120	2
Total	536	8

Grand total general diseases, including all the forms of malarial and other fevers, phthisis and other constitutional diseases: Cases, 4,034; deaths, 276. Per cent. of deaths, in general diseases, 6.83; rates of deaths in 1,000 cases general diseases, 68.3. One death from general diseases in 14.6 cases.

It is evident from the preceding figures that whilst the malarial (paroxysmal fevers) numbered 2,885 cases out of a total of 4,037 cases of constitutional diseases, or about 71.2 per cent.; on the other hand, the mortality occasioned by malarial fevers was only 88 out of 276 deaths from all general diseases. The mortality occasioned by the various forms of malarial fever was only about 31 per cent. of the mortality occasioned by all general diseases, including the former.

We will now examine the numerical relations of

the local diseases treated by the author in the Charity Hospital of New Orleans, during the periods already specified.

LOCAL DISEASES.

Diseases of the Nervous System.

	Cases.	Deaths.
Meningitis	8	2
Cerebritis	2	2
Softening of the brain	7	3
Abscess of the brain	2	2
Syphilitic tumor of base of brain	1	1
Apoplexy (cerebral hæmorrhage)	15	11
Cerebro-spinal sclerosis	1	1
Spinal meningitis	9	2
Myelitis	1	1
Atrophy of spinal cord	2	1
Sclerosis of spinal cord	6	
Hæmiplegia	59	12
Paraplegia	34	4
Paralysis caused by fear	8	1
Paralysis agitans	5	
Epilepsy	40	2
Locomotor ataxia	6	
Sciatica	8	
Facial neuralgia	27	
Chorea	1	
Dementia	13	
Dementia and general paralysis	6	2
Insanity	7	1
Tetanus	1	
Sunstroke (thermic disease.)	3	1
Alcoholism (delirium tremens)	170	9
Total diseases of the nervous system	442	58

Many of the cases of epilepsy were traced to the habit of self-abuse, and four of the cases of dementia and general paralysis were traced to the same cause. Without doubt a considerably larger number of these and other nervous disorders were induced originally by self-abuse and excessive indulgence of the sexual appetite; but the absolute reticence of many patients with regard to their personal history in such matters precludes the demonstration of the cause beyond all doubt. Six cases of epilepsy were referable to blows inflicted upon the crania during health, causing fractures and depressions of the bones.

Many of the cases of cerebro-spinal disease, dementia, general paralysis, paraplegia and hæmiplegia, appeared to have their origin in the abuse of alcoholic stimulants.

Diseases of the Circulatory System.

Heart; valve disease; mitral	30	11
Heart; valve disease; tricuspid	1	
Aortic pulmonary and tricuspid valves	8	3
Fibrinous concretion in heart	1	1
Hypertrophy and dilatation of heart	1	
Hypertrophy, dilatation and valvular disease	20	10
Fatty degeneration	4	3
Palpitation and irregular action	2	
Pericarditis	1	
Aneurism of ascending aorta	10	2
Fatty and calcareous degeneration of heart and arteries	1	1
Aneurism of arch of aorta	5	3
Aneurism of carotid	1	
Aneurism of descending aorta	1	
Aneurism of abdominal aorta	4	1
Valvular disease of heart and aneurism	1	1
Total diseases of heart and blood-vessels	91	36

Per cent. of deaths in diseases of heart and blood-vessels, 3.9.

Diseases of the Absorbent System.

	Cases.	Deaths.
Non-Syphilitic bubo	1	
Scrofulous disease of glands	1	
Disease of renal capsules (Addison's disease)	1	1
Total diseases of absorbent system	3	1

Diseases of the Respiratory System.

Bronchitis	160	4
Vesicular emphysema	1	
Asthma	49	3
Gangrene of lungs	1	1
Pneumonia	152	32
Pneumonia (double)	41	21
Pleuro-pneumonia	16	6
Pleuro-pneumonia (double) supervening on malarial fever	4	4
Pleuro-pneumonia supervening on phthisis	2	2
Abscess of lungs	2	1
Laryngitis, acute	7	2
Pleuritis	47	3
Hydrothorax	6	1
Pneumo-thorax	3	1
Total diseases of respiratory organs	491	81

Per cent. of diseases of respiratory organs, 16.7.

Diseases of the Alimentary Canal.

Inflammation of fauces and palate	1	
Ptyalism	1	
Tonsillitis	6	
Pharyngitis	3	
Trachitis	4	
Dyspepsia	4	
Gastritis	10	
Gastralgia	1	
Gastro-enteritis and jaundice	2	
Gastro-enteritis	5	
Cholera morbus	10	
Enteritis	7	
Dysentery, acute	122	17
Dysentery, chronic	90	42
Diarrhœa, acute	160	7
Diarrhœa, chronic	125	25
Dysentery and diarrhœa, chronic	131	30
Constipation	5	
Hernia	6	
Obstruction of bowels	2	
Hæmorrhoids	8	
Fistula in ano	2	
Prolapsus of anus	1	
Abscess of rectum	1	
Cancer of rectum	1	
Peritonits	1	
Total diseases of alimentary canal	709	121

Per cent. of deaths, diseases of alimentary canal, 17.3.

It will be observed that in the class of diseases of the alimentary canal, acute diarrhœa and acute dysentery occasioned 282 cases, with 24 deaths; and chronic diarrhœa and dysentery 346 cases and 9 deaths; the mortality being relatively greater in the chronic than in the acute forms of these diseases.

Many of the cases were brought in wretched condition from the swamps along the railroads and from the rice-fields above and below New Orleans on the banks of the Mississippi and its tributaries, or were complicated by the action of the malarial poison.

Diseases of the Liver.

Hepatitis	24	6
Hepatitis and abscess of liver	12	7

	Cases.	Deaths.
Cirrhosis of liver, with ascites and anasarca of liver	31	21
Adenoma and cirrhosis of liver	1	1
Jaundice	10	
Fatty degeneration of liver	3	
Amyloid degeneration of liver	1	
Hydatids of liver	1	1
Tuberculosis of liver	1	1
Obstruction of common bile duct and jaundice	1	1
Total	85	38

Per cent. of deaths in diseases of the liver, 44.7.

Diseases of the Spleen.

Splenitis	2	
Hypertrophy of spleen	1	
Leucocythæmia	1	1
Total	4	1

The following facts should be noted with reference to the preceding classification of the diseases of the liver and spleen: The cases recorded as jaundice did not represent the number of cases presenting this symptom; for almost every case of yellow fever, and a large number of the various forms of malarial fever, as well as some cases of hepatitis, cirrhosis and pneumonia were jaundiced. Every case of prolonged malarial fever presented more or less hepatic derangement and enlargement of the spleen, but the secondary derangements were included under the head of the original malarious diseases.

Diseases of the Kidneys.

Bright's disease of the kidneys	80	24
Acute nephritis	2	1
Diabetes mellitus	3	1
Diabetes insipidus	2	
Renal calculi	1	
Total	88	26

Per cent. of deaths in diseases of the kidneys, 39.4.

Diseases of Bladder and Male Organs of Generation.

Cystitis	6	
Enlarged prostate	1	
Stricture	9	
Urinary fistula	1	
Vesico-vaginal fistula	1	
Gonorrhœa	25	
Hæmorrhage from urethra	1	
Varicocele	4	
Cancer of the penis	1	
Phymosis	3	
Hydrocele	6	
Orchitis	10	
Syphilitic enlargement and induration of the testicle	2	
Total diseases of the bladder and male organs of generation	70	

Diseases of Female Organs of Generation.

Gonorrhœa	5	
Prolapsus uteri	2	
Amenorrhœa	1	
Myalitis	3	
Abortion	3	
Vesico-vaginal fistula	1	
Recto-vaginal fistula	2	
Fibrous tumor of uterus	2	1
Cancer of uterus	1	
Total diseases of female organs of generation	20	1

In 1869 I took charge of the female wards during the absence of my friend and colleague, the late Professor Frank Hawthorne, and here the cases of female diseases appear amongst my records.

Diseases of the Organs of Locomotion.

	Cases.	Deaths.
Caries and necrosis of bones	6	
Synovitis	4	
Caries of spine, with curvature	2	
Psoas and lumbar abscesses	3	1
Total	15	1

Diseases of the Cutaneous System.

Urticaria	2	
Psoriasis	5	
Pemphigus	1	
Scabies	5	
Eczema	2	
Total	15	

Diseases of the Eye, Nose and Ear.

Conjunctivitis	1	
Purulent ophthalmia	1	
Gonorrhœal ophthalmia	2	
Scrofulous ophthalmia	1	
Opacity of cornea	3	
Syphilitis iritis	3	
Scrofulous iritis	2	
Cataract	4	
Blindness	6	
Ozæna	1	
Otorhœa	1	
Total	25	

Injuries, Ulcers and Abscesses.

Burns and Scalds	6	
Ulcers	28	1
Amputations of lower extremities for ulcers	3	1
Gangrene of both feet—resulting from exposure to cold during nights in Louisiana Swamp—amputation of both feet.	1	
Concussion of brain	6	3
Contusion of head	1	
Contusion of back	5	
Contusion of abdomen	4	
Fractures	5	
Fracture of femur in old age	1	1
Incised wounds	6	
Dislocations	2	
Gunshot wounds	4	
Ear, parotid gland, etc	21	
Abscess of parotid gland and pyæmia	1	1
Abscess of rectum and pyæmia	1	1
Cancrum oris	1	
Total	96	8

Poisons.

Lead poisoning	11	1
Opium habit	7	
Poisoning by carbolic acid and carbonic oxide gases	1	1
Opium poisoning	1	
Poisoning by oxalic acid	1	
Total	21	2

Conditions not Necessarily Associated with Local or General Diseases.

Parturition	16	1
Hypochondriasis	8	
Old age and senile debility—many of the fatal cases were attended with ossification and degeneration of blood vessels and failure of the heart, brain and lungs	65	13
Total	89	14

Parasites.	
Tænia solium—tape-worm	11
Total	11

The mode in which I have grouped the different diseases is not free from certain objections. Thus I have classed *alcoholism* (delirium tremens) and *mania a potu* under the head of nervous diseases, whilst the effect of alcohol might with almost equal propriety be classed under the head of poisons. As the habitual use and abuse of alcoholic stimulants leads to fatty degeneration, hepatic derangements, cirrhosis of the liver and kidneys, exhausted nerves and intellectual forces, and other abnormal conditions, it is evident that *alcoholism*, delirium tremens, and *mania a potu* might also with equal propriety be classed with *general diseases*. Nevertheless, as the most prominent symptoms caused by the excessive use of alcohol in patients transferred from the streets and crowded habitations of the poor to the crowded wards of a hospital, are referable to the nervous system, such as wild delirium, sleeplessness, muscular and nervous agitation, it is evident that for all practical purposes those suffering from the effects of alcohol may be classed as in the preceding tabulated statements.

The preceding facts are significant, showing that alcohol does not destroy its victims, in most cases, suddenly, as in the dead sleep of profound intoxication, or in the wild maniacal ravings of delirium tremens. By slow and measured steps, in most cases by inducing cirrhosis of the liver, Bright's disease of the kidneys, anasarca, ascites, rheumatism, rheumatic gout, defected vision, fatty degeneration of the heart, arteries and muscular system, which finally end in paralysis, imbecility and insanity, alcohol encircles its victims in irremediable and everlasting ruin.

Without doubt, *alcohol* occasions a vast amount of disease over the face of this mighty Republic, and carries death, destruction, dishonor and shame into thousands of happy homes. Alcohol is at the bottom of a large proportion of the crimes committed in the United States. Alcohol dethrones reason and poisons the fountains of sentiment and morals, and is even more destructive upon the moral and intellectual nature than upon the physical organism of man.

GENERAL SUMMARY.

	Cases.	Deaths.
General diseases	4,034	276
Diseases of the nervous system	442	59
Diseases of heart and blood vessels	91	36
Diseases of absorbent system	3	1
Diseases of respiratory system	493	82
Diseases of alimentary canal	709	123
Diseases of liver	85	38
Diseases of spleen	4	1
Diseases of kidneys	88	26
Diseases of bladder and male organs	70	
Diseases of female organs of generat'n	20	1
Diseases of organs of locomotion	15	1
Diseases of cutaneous system	15	
Diseases of eye, nose and ear	25	
Injuries, ulcers and abscesses	96	8
Poisons	21	2
Conditions not necessarily associated with local or general diseases	89	14
Parasites	11	
Total	6,311	668

Per cent. of deaths from all causes, 10.4. Ratio of deaths per 1,000, 104. One death in 9.44 cases.

If a comparison be instituted between the rate of mortality in the cases under the immediate care of the author, and the general statistics of the Charity Hospital, we obtain the following data, which we have consolidated at the expense of much time and labor:

During eighteen years preceding the civil war (1842–1861) the total admissions into the Charity Hospital of New Orleans were 207,356; total deaths, 29,614; per cent. of deaths, 14.2.

During the sixten years following the civil war, (1864–1881), total admissions, 96,857; total deaths, 14,104; per cent., 14.5.

Total admissions during thirty-four years, 304,213; total deaths, 43,718; per cent. of deaths in the Charity Hospital of New Orleans during the thirty-four years specified, 14.3.

The greater proportion of the cases of fever and of all other diseases treated by the author in the Charity Hospital during the period specified (1869–1886), were natives of foreign countries and of surrounding States. Many had resided in Louisiana only a short time, not exceeding one year in the United States; whilst many were brought directly to the wards of the hospital from the swamps and rice-fields of the Delta of the Mississippi River within a few months after their arrival from Europe.

Upon a careful examination and classification of statistics of the Charity Hospital of New Orleans during the period of forty years (1836–1876) we find that 310,659 patients were admitted; and of this number 248,011 were foreigners, 55,403 natives of the United States outside of Louisiana, and only 11,671 were natives of Louisiana.

During the entire period of the hospital service of the author, similar relations with reference to nativity existed amongst the patients under his charge and treatment.

Thus, during a term of service extending from October 1, 1884, to April 1, 1885, of a grand total of 547 cases treated by the author in the Charity Hospital, only forty-two were natives of Louisiana, and of them only eighteen were natives of New Orleans, the remaining twenty-four having been born in the various parishes of Louisiana. Of the sixty-three deaths occurring during the period, only two were natives of New Orleans, and the cause of death was the same in both, viz., *phthisis pulmonalis*. Amongst the twenty-four natives of the other parishes of Louisiana four deaths occurred, by the following diseases: Chronic Bright's disease, chronic dysentery, pernicious malarial fever, malarial toxæmia or cachexia of long standing, with enlarged spleen, anæmia and general anasarca.

The natives of Louisiana constituted only 7.6 per cent. of all the cases treated, and the mortality 9.2 per cent. of the deaths from all causes.

During a term of hospital service extending from October 1, 1885, to April 1, 1886, of a grand total of 323 cases of all diseases treated by the author, eleven were natives of New Orleans and sixty of the parishes outside of the limits of the parish of

Orleans. The foreigners and natives of other States of the Union numbered 252.

RELATIVE MORTALITY IN THE WHITE AND NEGRO RACES IN NEW ORLEANS.

The statistics which the author has presented, illustrating the general results of his medical practice in the Charity Hospital, relate almost exclusively to the *white race;* the occasional presence of Chinese, Japanese, Malays, Arabs, and whites tinged with negro blood in his wards, could not afford sufficient material for calculation, as far as the diseases and mortality of different races were concerned. Preceding the civil war the number of colored people treated in the Charity Hospital was comparatively small. But since the emancipation of the negro slaves the number of negroes applying annually to be treated in this institution has increased.

It is well known that the colored race form a larger proportion of the population of New Orleans than of any other American city, and at the same time it has been established that the death-rate of the colored population exceeds that of the whites in American cities.

I have prepared the following table, illustrating the mortality of New Orleans for a series of years, giving the death-rate for whites and colored:

MORTALITY OF NEW ORLEANS, LOUISIANA.

Death-rate per 1,000 Inhabitants.

Year.	*White.*	*Colored.*	*Total.*
1845	25.10	22.50	24.32
1847	70.86	37.08	62.03
1849	81.92	62.91	77.44
1850	63.08	52.10	59.38
1852	67.91	43.04	62.90
1853	124.68	48.98	110 09
1856	32.98	35.66	33.89
1857	34.86	38.07	35.49
1858	69.64	80.37	72.70
1859	33.58	86.78	41.53
1860	41.99	52.79	43.51
1861	31.58	37.16	31.87
1863	37.30	59.53	41.35
1864	42.14	81.75	49.86
1865	33.32	60.88	38.99
1866	36.77	65.56	42.52
1867	56.79	47.80	54.69
1868	25.49	38.97	28.60
1869	27.24	44.80	31.75
1870	33.74	52.20	38.61
1871	27.26	42.76	31.32
1872	27.29	41.93	31.17
1873	32.79	51.42	37.73
1874	29.53	43.44	33.75
1875	26.28	40.25	30.00
1876	25.87	42.50	30.31
1877	25.96	49.02	32.11
1878	52.05	39.94	48.81
1879	20.85	32.41	23.95
1880	22.96	34.38	26.01
1881	25.79	38.95	29.31
1882	21 89	39.03	26.45

During the period of thirty-two years embraced in the above table, with the exception of the year 1870, the death-rate amongst the whites was the lowest in 1882.

The average death-rate for the thirty-two years amongst the whites was about 39.6; and for the colored people about 47.1. I observe a marked diminution of the death-rate amongst the whites during the last four years of this table, which ranged from 20.85 to 25.79 per 1,000 white inhabitants per annum.

These figures (1879–1882) will compare favorably with those of cities in which the vast proportion of the inhabitants belong to the white race. Thus, during the same years (namely, 1879, 1880, 1881 and 1882), the death-rate in Boston ranged between 20.38 and 33.53; New York. 25.82 to 31.08; Brooklyn, 21.09 to 24.84; Philadelphia, 17.17 to 22.62; Pittsburgh, 19.49 to 27.23; St Louis, 18.01 to 22.07; Chicago, 18.01 to 25.69.

When it is considered that New Orleans receives a vast number of sick whites from all the States tributary to the Mississippi River, in her great and noble Charity Hospital, as I have shown by the statistics recorded in this paper, and also by the elaborate and extended statistics which the author has published as President of the Board of Health of the State of Louisiana 1880, 1881, 1882 and 1883; and when it is still further noted, that the deaths of these strangers and aliens are recorded to the credit of New Orleans, it is evident that the mortality rate amongst her white inhabitants will compare favorably with that of any American city. Of course we exclude from this statement the ravages of foreign pestilence, and more especially Asiatic cholera and yellow fever.

The results of the rigid system of quarantine and of domestic and maritime disinfection and sanitation established and conducted during the four years in which the author held the position of President of the Board of Health of the State of Louisiana (1880, 1881, 1882, 1883), lead us to hope that foreign pestilence may be forever excluded from the Valley of the Mississippi.

156 Washington St., Fourth District, New Orleans, La., May 1, 1886.

MECHANICAL TREATMENT OF RETROVERSION OF THE UTERUS.[1]

BY HENRY T. BYFORD,

PHYSICIAN AND SURGEON TO THE WOMAN'S HOSPITAL OF CHICAGO.

Retroversion of a fully developed uterus, in which there is no flexion, presupposes a displacement of the os and lower end of the cervix forward. Causes of retroversion act by either weakening the natural supports or bringing an abnormal or unusual strain to bear upon them. The mechanical treatment, or that which corrects the displacement while a cure is being accomplished, or attempted, should avoid weakening or interfering with the natural supports.

We may divide the more directly mechanical means usually adopted for correction of such deformity into four kinds.

1. Those which permanently fix the fundus in front of the pelvic axis.

2. Those which draw or fix the os or cervix back of the pelvic axis.

3. Those which place a barrier or obstacle to the forward displacement of the os and cervix.

4. A combination of two or more of these methods.

The fixation of the fundus forward has been done in four principal ways:

1. By the Alexander operation, in shortening the round ligaments. It was suggested by Alquié, recom-

[1] Read before the Chicago Medical Society, July 6, 1886.

mended by Aran, experimented upon on the cadaver by W. A. Freund, and successfully performed and established as a therapeutic measure by W. Alexander.

2. The stitching of one (or both) round ligaments to the abdominal walls, as has been done by William H. Byford while performing laparotomy for another purpose. An examination after two menstrual periods had passed showed that the uterus was still held up by its new attachment.

3. Stitching a broad ligament to the abdominal wall, as has been successfully done by Kœberlé and Schrœder during laparotomy for another pathological condition. The uterus in Kœberlé's case was found upon examination by Carl Braun, after ten years, to have retained its new position.

4. The stitching of the uterus to the abdominal wall, as recommended by Mueller and Lawson Tait, and performed by Skene Keith, Haywood Smith and probably others by an especial laparotomy.[1]

These operations have the common disadvantage of an unnatural fixation of the fundus forwards. Drawing or holding of the cervix back has been accomplished by the hazardous expedient of cauterizing the vagina for the purpose of producing cicatrical contraction behind the cervix, as by Amussat and others, or of causing adhesive inflammation in the posterior cervical and vaginal walls; or by the safer plan of denuding these apposed surfaces and stitching them together, as recommended by W. Lœwenthal and performed by Hunter, of New York, O. E. Herrick, of Michigan, and others.

The objection to such procedure, besides the danger of peritonitis, lies in the fact that either the cervix must be held back rigidly, or the posterior vaginal attachments must become loosened. Emmett thinks that the consequent traction upon the bladder must be a serious objection.

But the most common and available method is by pessaries of the Hodge class, such as the Albert Smith, Thomas, Emmett, Hewitt, Hanks, Nœgerath, Schrœder, Gehrung, etc., which press backwards and upwards behind the cervix, and thus draw it back and drop the fundus forwards. They hang up the cervix, and thus supplement or supplant the posterior suspensory or sacro-uterine ligaments of the uterus. But in doing this they are apt to hold the uterus in a state of forced anteflexion, and weaken or irritate these ligaments; and by stretching the vagina longitudinally to loosen its attachments.

The pessaries with external supports such as Priestly's, Lazarewitsch's, Cutter's, Thomas', Scott's, can often be introduced by the patient, and thus sometimes serve a better purpose than those just mentioned. I have never used a pessary with more satisfaction than occasionally Scott's in case of relaxed vaginal outlet.

H. Marion Sims has recently[2] presented a retroversion stem pessary in which the cervix is pulled back by the intra-uterine stem instead of a post-cervical bar. The bar of a Hodge pessary practically passes under the cervix and affords a hinge-like support to the stem. There are undoubtedly atrophic or imperfectly developed uteri with retroversion for which this instrument will be found preferable to others.

In some cases of small vagina and cervix, the elastic ring of Peaslee, Mayer, or Dumont-Pallier, or an inflated rubber bag or ring, or a hard rubber round or oval ring, may be made to distend the vagina and thus draw the cervix into a less abnormal position. But the majority of them are relics that belong more to history than to practice, which we take out oftener than we introduce, yet which occasionally do some good where others cannot be used. They remind us that no form of pessary can be used for all cases, and reproach us for having no suitable pessary for many cases.

The method of keeping the cervix and os back by placing an obstacle in front of it, acts upon a rational principle, and does not labor under the disadvantage of supplanting, and thus favoring atrophy of natural supports, irritating or pressing upon tender and inflamed tissues behind the cervix, of greatly stretching the vagina, of drawing open lateral lacerations of the cervix, or of holding the uterus in a state of harmful immobility. This may be accomplished by a pessary or by a plastic operation.

Pessaries of this class should keep the cervix so far back that the abdominal pressure will force the fundus forward or, in case the ligaments are utterly relaxed and useless, should hold the cervix so near the hollow of the sacrum that the fundus will, for want of space, be unable to fall back into a permanent state of retroversion. The simplest and least objectionable form is the cotton plug, which is made into a shape resembling a small pool of thread, saturated with glycerine or some other disinfected lubricant, placed transversely in front of the retroposited cervix, and changed every day. After a time the patient may take the plug out at night and have it introduced in the morning. Some patients learn to use them themselves.

A rectal tampon which was recommended by Huguier in 1865, might be made to act efficiently in this way in exceptional cases in which nothing can be retained or tolerated in the vagina, especially if the weakened perineal body were supported at the same time by a perineal pad. A flattened globe of glass, hard rubber or hollow metal of appropriate size, might for want of something better be occasionally used by the patient with comparative comfort and benefit.

Courty's pessary consists of two bars which rest on the pelvic floor, and are joined by a cross bar in front where they rest against the pubes or vaginal entrance. Behind, the bars curve up in front of the cervix, and form a more or less rigid barrier to its forward movement.

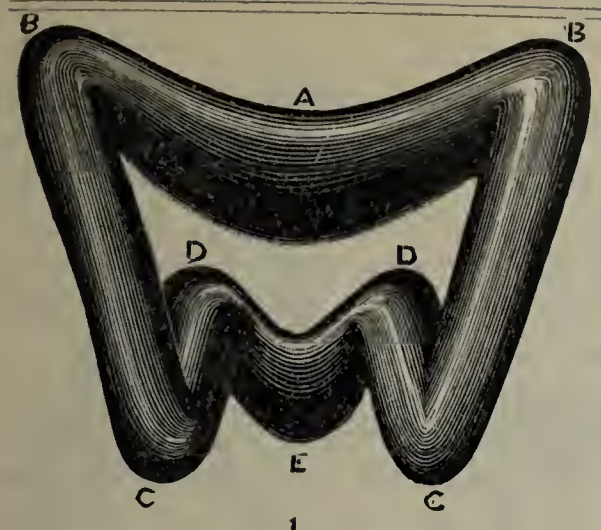
Gehrung's[1] instrument has the shape of a very small excessively curved Albert Smith pessary, with the cross bar in front of the cervix. The chief objections to it are that the pressure against the cervix must be constant, and hence, unbearable, to keep either it or the uterus in place, and that the vaginal walls are apt to be held apart.

---

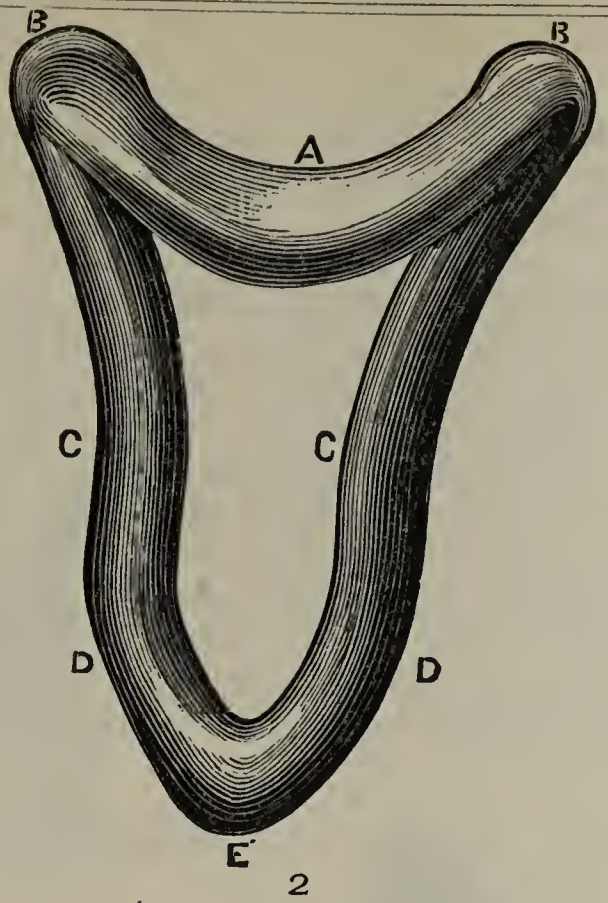
[1] The methods of these operators, I have not for want of time and opportunity been able to determine.

[2] New York Obstetrical Society, April 6, 1886.

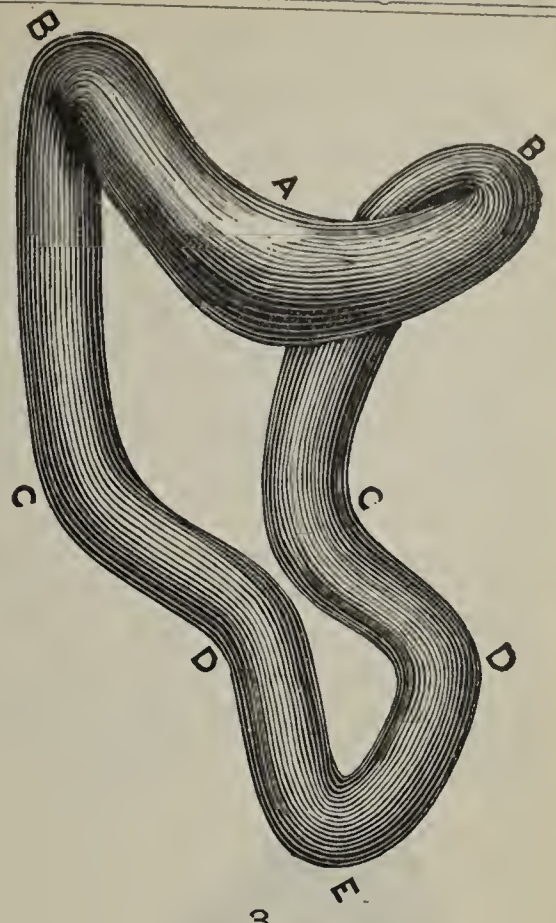
[1] The *anteversion* pessary, called "Gehrung's pessary," is not the one refered to.



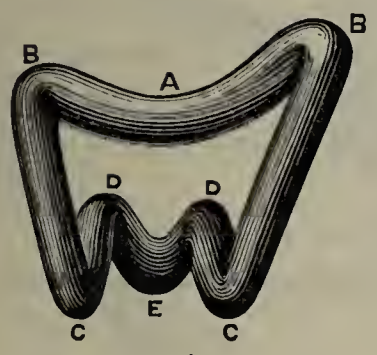
1



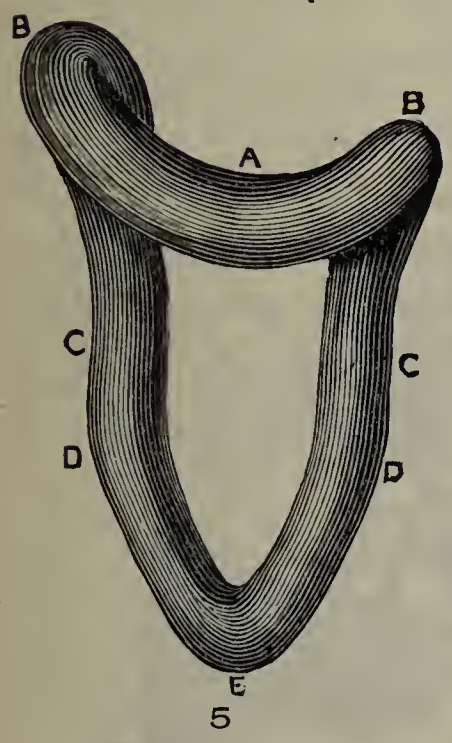
2



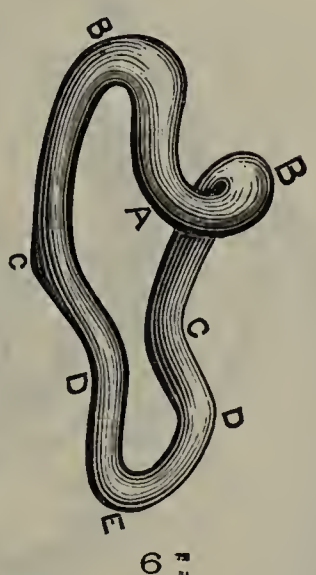
3



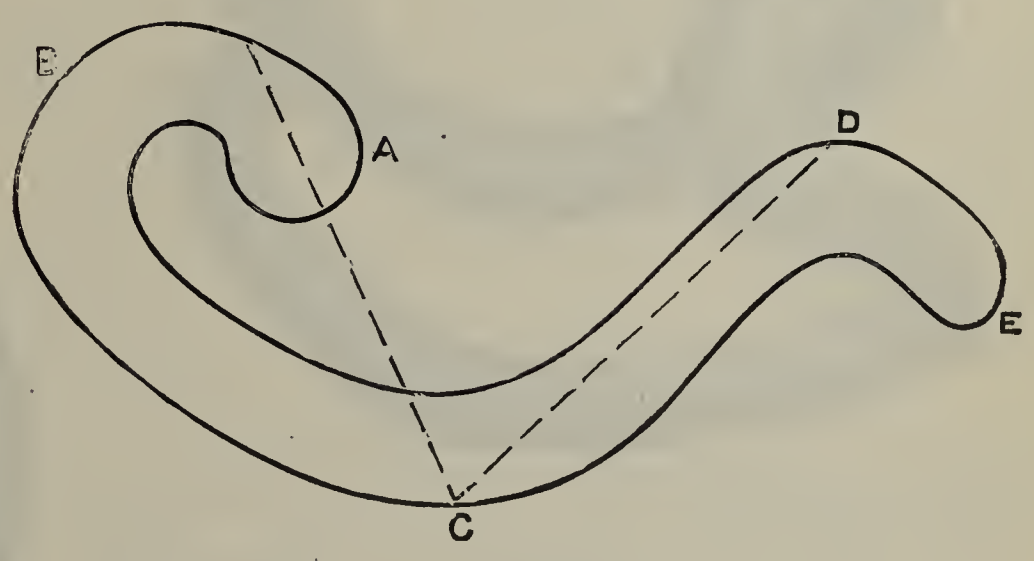
4



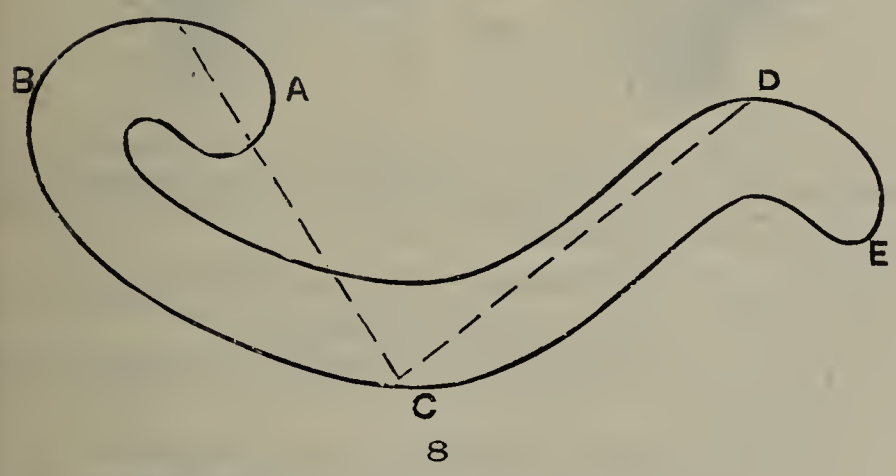
5



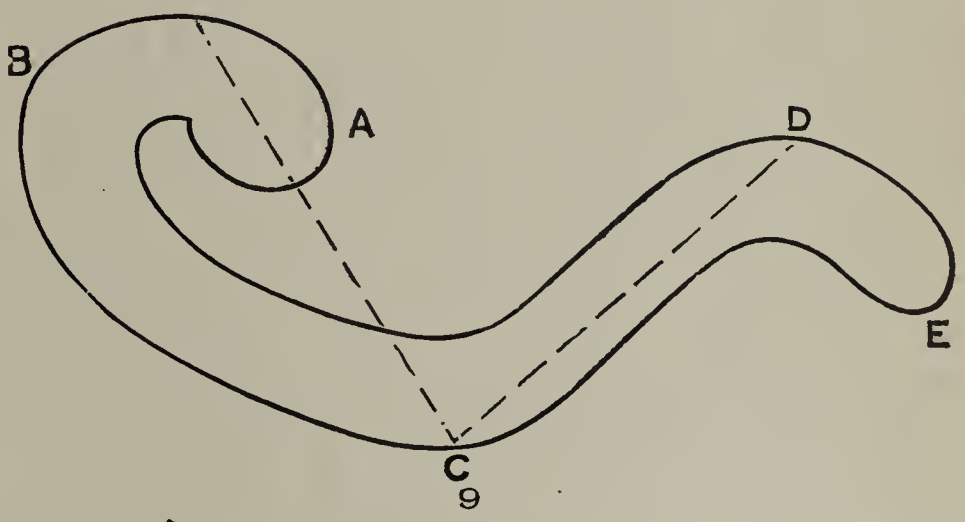
6



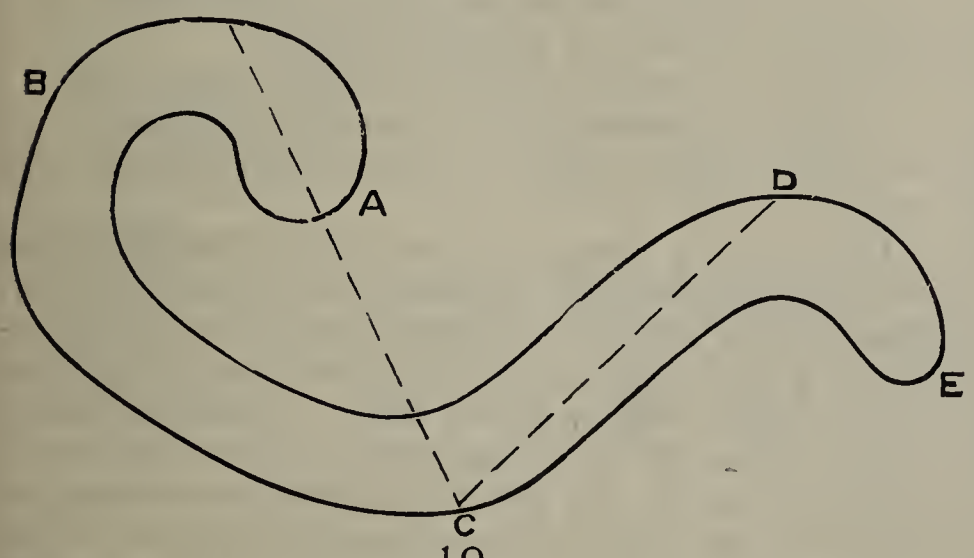
7



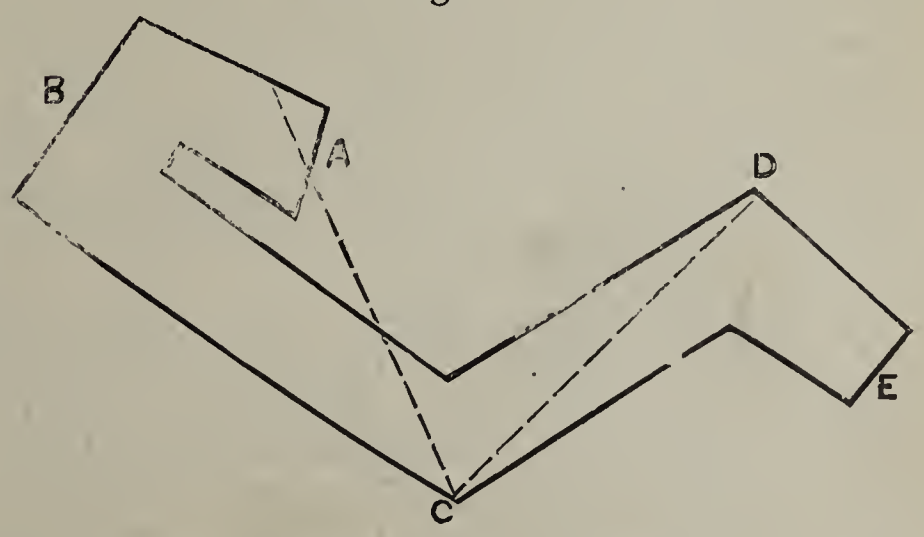
8



9



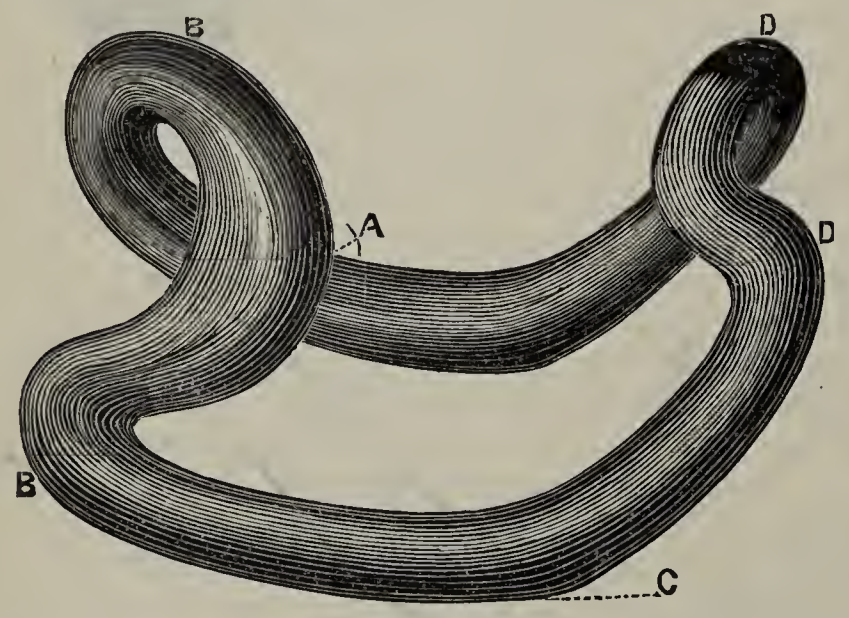
10



11

PLATE I.—a, neck; b, shoulder; c, elbow; d, handle; e, free end; 1, 2, 3, different views of same instrument; 4, 5, 6, modified for lateral displacements; 7, for small vagina; 8, ordinary form; 9, for lax vagina and outlet; 10, for raising heavy uterus from relaxed pelvic floor. 11, schematic.

I have constructed a pessary to take the place of the cotton plugs I formerly used, which I think possesses the virtues of both Courty's and Gehrung's, although it was devised and so far perfected before I had seen or studied either of them. It may almost be made from a Thomas' or Albert Smith shape by bending forward the posterior arms so as to form a sort of crescent running around in front of the cervix and impinging against its anterior and lateral vaginal junction. The uterus settles in this crescent or neck more comfortably than against a cotton plug, and if too heavy for its supports, is held up by the pressure upwards of the neck, or crescent against the vagina around the anterior half of the cervix. The shorter curve of the arms is placed anteriorly instead of posteriorly as in the Hodge patterns, in order to retain the lever action. (Plate 1).



Handle curved up behind symphisis instead of under the pubic arch. For relaxed vaginal outlet.

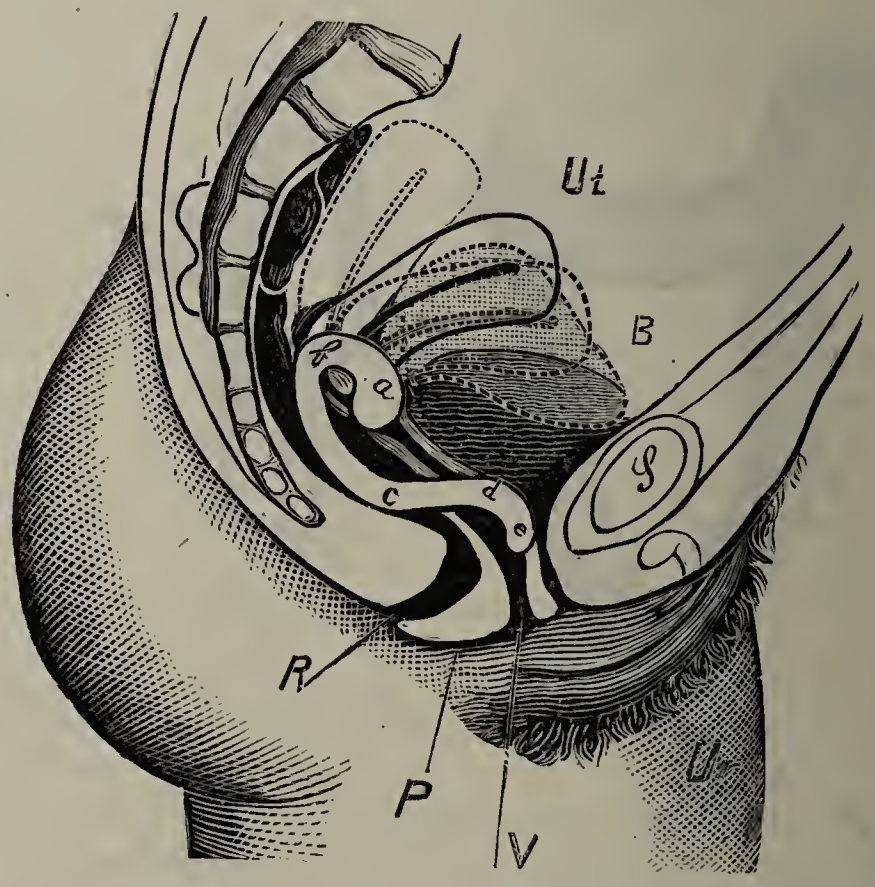
The parts of the instrument are a neck *a*, two shoulders *b*,*b*, two elbows *c*,*c*, two arms *b*,*c*,*d*, a handle *d*,*d*, and the tongue, or, free end, *e*, The uterus impinging against its neck at *a* makes a lever of it, whose arms are represented by lines passing from *a* to *c* and *c* to *d*, and which, during ordinary abdominal pressure forces the handle *dd* up behind the symphisis pubis instead of through the vulva. The elbows or fulcrum *c*,*c*, rest on the posterior wall of the vagina or on the pelvic floor, at either side of the rectum. The longer the arm of the lever *a c* in comparison with *c d* the greater the upward pressure of the handles and the less their liability to escape externally. If during heavy lifting, defecation, or abdominal pressure while in a stooping position, the depressed anterior vaginal wall forces the handle down until it appears under the pubes, the patient has only to push it back; or if (as seldom happens with a properly adjusted pessary) it does not slip into proper place, she has but to assume the knee chest position. This descent of the handle under great pressure, instead of being a disadvantage acts as a sort of safety valve, to prevent injury being done.

On account of slight relaxation of the vagina or of the pelvic floor, it may, when the uterus is unusually heavy, become necessary to change the first instrument for a larger size, or else make some alterations. Later a smaller one may again be used. The alterations most often required are raising or depressing of one or both shoulders, or of the neck, or of both shoulders and neck, in order to afford more or less general support at different points; or to vary the curves of the arms in order to increase or diminish the lever power. Escape may be effectually prevented by taking off the tongue, making it more like the Courty or like a reversed sleigh pessary. It may then be used for retroflexion and prolapse.

A very small instrument with gentle curves is required for the virgin and congenitally sterile woman, while a very large one with abrupt anterior curves and broad handle may be required for the child-bearing woman with relaxed vagina and pelvic floor. The shoulders must also be higher in proportion to the centre of the neck when the upper vagina is relaxed, so that they may get a vaginal bearing on either side of the cervix. (Plate 2).

PESSARY IN PLACE.

Dotted and interrupted lines show possible temporary positions of the uterus allowed by the pessary.



PLATES 2 AND 4.—R, rectum; P, perineal body; Ur, Urethra; V, vaginal entrance; S, symphisis; B, bladder; a, b, c, d, e, pessary; Ut, uterus; L, lines indicating places for uniting cervix or anterior vaginal walls with posterior vaginal walls.

I have made the pessary fulfil the following six requirements in its own class of cases:

1. To place the uterus in a normal, or nearly normal, position.
2. Not to interfere with the natural supports.
3. To support the uterus in a natural manner; *i.e.*, to afford an elastic or yielding support.
4. Not to interfere with the use of a speculum.
5. Not to interfere with the marital relations.
6. The patient shall be able to both introduce and remove it.

The ordinary Hodge pessary and its modifications are generally faulty in requirements one, two and six. This pessary allows the vagina to collapse, and practically presses against no supports, except the posterior vaginal wall or pelvic floor. Its neck is firmly pressed upon by the cervix uteri only a part of the time, viz., during the action of influences tending to retrovert the uterus; the coustant pressure is distributed half-way around the cervix and is against the

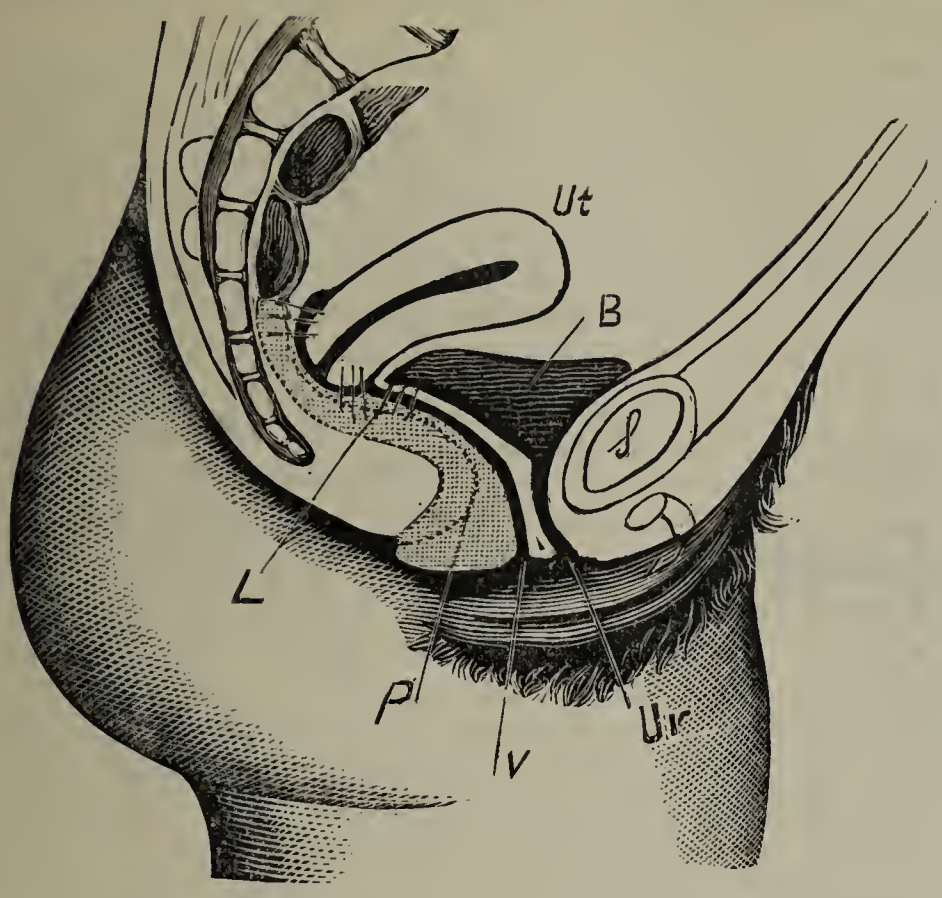


PLATE 4.—Median section after operation for raising posterior vaginal wall, perineum and pelvic floor, as a barrier to the forward displacement of the cervix. The section is supposed to swerve to one side of the rectum, to give a better view of the relations of the pelvic floor to the uterus. Rectum indicated by dotted lines. Places for uniting vaginal or cervical and vaginal walls indicated by lines.

vaginal junction. All other instruments of this class fail because they exert constant pressure on the cervix in front and are thus unscientific and intolerable. But perhaps its most valuable characteristic is that it can be properly introduced by the patient. She has but to slip first one of its shoulders under the symphisis, and then the other over and beyond the depressed fourchette, turn it so that the neck will be towards the urethra, and then assume the knee chest position and allow it to slide into place, or she can introduce it while on her side after having replaced the uterus by the knee chest position. In removing it she turns it a little more than a quarter circle,so that one shoulder is toward the symphisis, and then, as she pulls it out, pries either the upper or lower shoulder out under the symphisis, or over the fourchette, as she finds easier. A slight twist or rotary motion as the first shoulder escapes, so as to miss the urethra will enable her, after a few trials, to remove it easily and painlessly. After wearing it steadily for a couple of months she may remove it nights and introduce it mornings for three, four or six months longer, avoiding sleeping on her back. A very practical point here is to caution the patient after removing it not to allow the bladder to become much distended in the night until all tendency to retroversion has been lost. She may either avoid taking fluids in the evening, or else get up and urinate during the night. Carelessness on this point in the treatment of retroversions often delays, and sometimes prevents, a cure.

The pessary may usually be introduced by the physician, in the lithotomy position by following it into the vagina with the finger under the handle, and pressing down, or back, the cervix while the other hand pushes the instrument and uterus into place, or if unsuccessful by putting her into the knee chest position, and displacing the fundus from the hollow of the sacrum by the finger, when the instrument need only be allowed to follow into place.

Especial contra-indications to this form of pessary are: Tenderness or induration in the vesico-cervical region, decided *retroflexion*, an insufficient projection of the cervix into the vagina, and an unusually short vagina, more particularly the anterior wall. Irritation on either side of the urethra or pressure upon the deep dorsalis clitoridis nerves and vessels are not contra-indications, but call for a greater approximation, separation or downward curving of the arms anteriorly at the handle. All pessaries require some skill in preventing irritations.

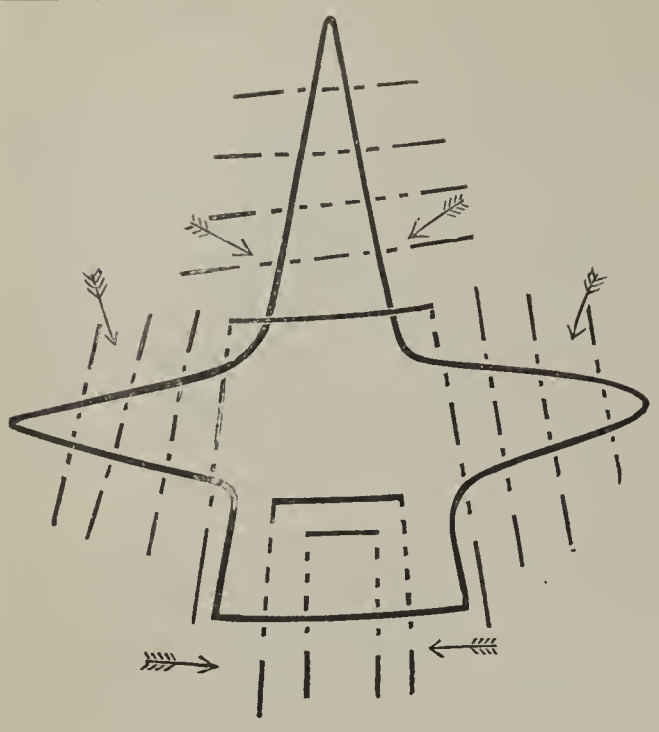
Especial indications are: Retroversion with subinvolution after abortion or labor, or with bilateral laceration of the cervix in which the traction of the other forms acts hurtfully, a lax vagina, post cervical tenderness. It it useful after the uterus has been held anteverted by the Hodge instruments for some time and we wish a less rigid support, and one that the patient can use, and gradually lay aside. I find the uterus less apt to retrovert after its prolonged use than after any of the Hodge class.

In preparing a subinvoluted uterus with bilateral laceration and eversion, but without retroversion, it is also exceedingly useful in lifting the cervix from the pelvic floor. When properly adjusted it acts as a support to the everted labia us well as to the uterus, and often causes the ulceration to quickly fade out. One shoulder may be enlarged or raised for lateral flexion or inclination, provided no rigid ligaments or adhesions interfere.

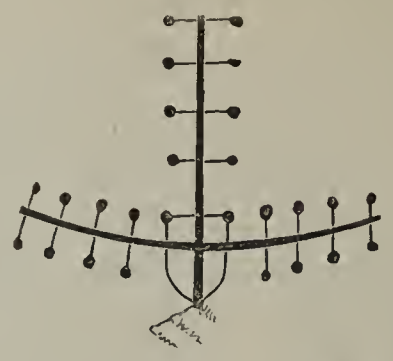
As pessaries whose only aim is to relieve the retroversion, the Hodge forms will perhaps answer in more cases, for they hold the uterus anteverted, but as a pessary which interferes the least in most cases for which it answers, and which is suited to its own class beter than any other, I find this one of great value.

I hope that it will not be tried by any one for all cases of retroversion, and condemned because of frequent failures. For instance, I have a case of retroversion and anteflexion with a long and flabby anterior vaginal wall, in which I failed with this pessary, because the cervix slipped down under the neck if the neck was high, or slipped over it if it was too low. Yet in this case a thicker neck would undoubtedly have remedied the defect. The Albert Smith pessary had been tried twice before, and was not tolerated. The most common of the contra-indications which I have met are the retroflexions which so often co-exist with retroversions. For these cases the bar should be behind the uterus or the Harry Sims form be used, or my pessary combined with a stem.

Among plastic operations I have found the raising up of the recto-vaginal promontory and perineum of great benefit, and sometimes curative. This makes it necessary for the womb to rise in the pelvis before the os can get forward, and thus places a barrier before the cervix, and also tends, by fixing the vaginal walls, to correct its excessive mobility. It is chiefly accomplished by shortening the relaxed or retracted fibres of the levator ani muscles, and including some of the connective tissue with the stitches. The form of denudation must vary with



1.



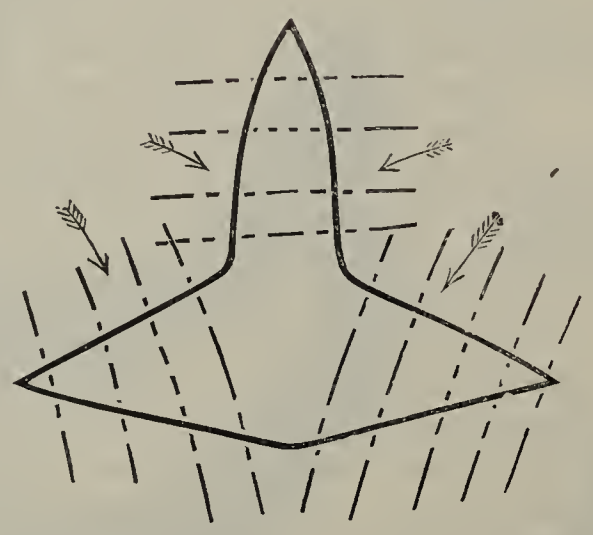
1 a.



2 b.



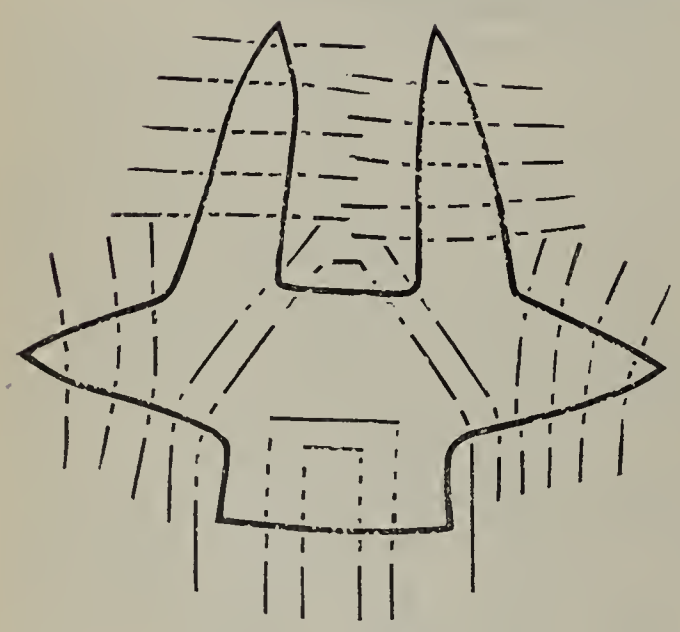
2.



3.



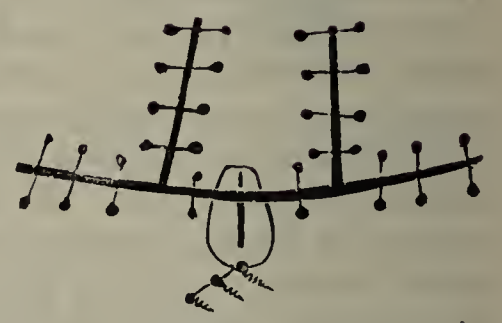
3a.



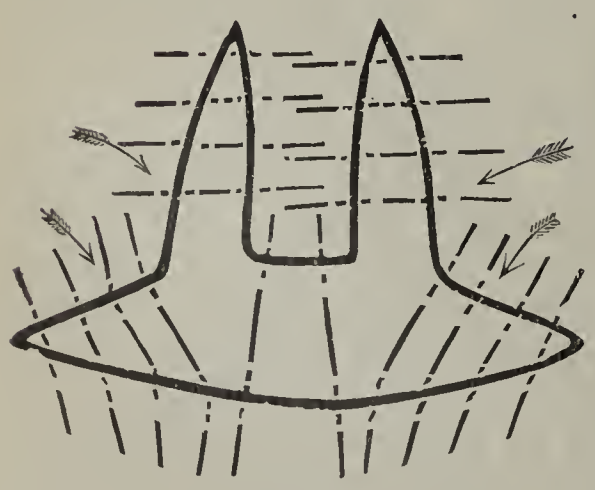
4.



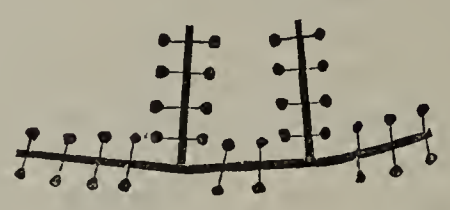
4 a.



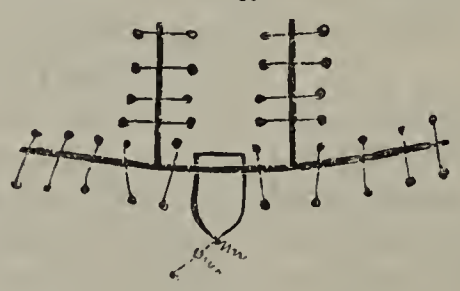
4 b.



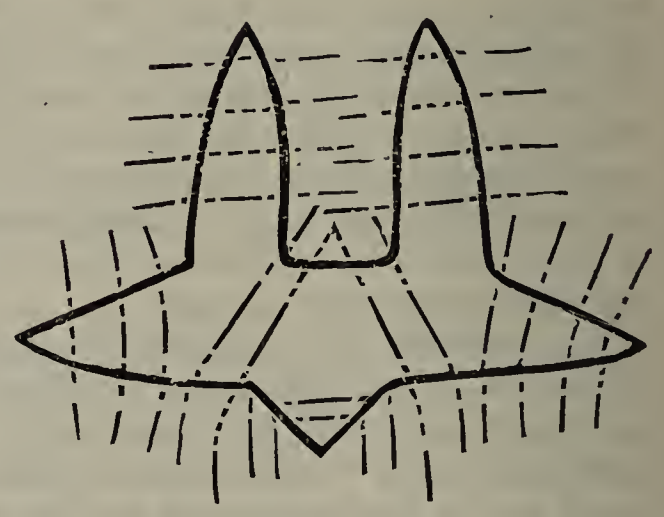
5.



5 a.



6 a.



6.

PLATE 3.—1. Complete figure, with central triangle. 1 a. United. 2. With small triangle in vulva, for raising fourchette. 2 a. United. 3. Without narrowing vulvu. 3 a. United, 4. Complete figure, with lateral strips posteriorly. 4 a. Posterior strips united. 4 b. United. 5. Without narrowing the vulva. 5 a. United. 6. Triangular notch for raising the fourchette, added. 6 a. United. Arrows show the main directions of muscular fibres. Dotted lines show where the stitches dip into the tissues.

each case. That which I have found most successful is a transverse strip removed just inside of the fourchette or carunculæ, between one and two inches long, and from one quarter to an inch wide, crossed by a triangle whose base is at the posterior commissure, or, if that had been destroyed at the junction of skin and mucous membrane or cicatricial surface externally, whose sides pass through or include the lower carunculæ, and whose apex is in the median line of the posterior vaginal wall beyond the introitus (Plate 3). An imperfect star is thus produced which contains considerable denuded surface, but whose points or angles, upon being sewed up, will unite ends of muscular fibres without much traction upon other surrounding tissues or displacement of parts. The main stitch, introduced through the right labium majus at the base of the triangle and brought out through the mucous membrane at a point near where the same side of the triangle intersects the posterior border of the transverse denuded strip, then introduced at the corresponding point behind the transverse denuded strip on the left side, and brought out through the left labium at the base of the triangle, will draw the star together in the form of a cross, and indicate what edges are to be stitched together. This main stitch should not be twisted until after the vaginal stitches.

The triangle will, of course, be divided in the centre as the star is pulled together, forming two long right-angled triangles whose shorter legs form the restored cutaneous raphe of the perineum as they meet in the median line. Their hypothenuses coming together in the median line, in the vagina form one side of the cross; the united transverse strip forms the other side. When the patient has not borne children the perineum is seldom greatly relaxed externally and the vulval wedge may be omitted, so that the base of the triangle will be upon the posterior border of the transverse denudation. A small neck or minute triangle may be taken from the fourchette, whose apex is at the posterior commissure, and whose base is at the anterior edge of the transverse strip, to better raise the sagging fourchette. Or if the fourchette be already high, the point at either end of the transverse strip may be placed so that when the triangle projecting into the vagina is closed both sides of the transverse strip will be of equal length and be easily united. Broad strips must, of course, not be taken from the vagina of those who may afterward bear children; but, on the other hand, the triangle should be made broad and long and the transverse strip wide in operating upon those with rectocele or who have passed the menopause, in whom there is often great relaxation, destruction or retraction of tissue.

When the *levator ani* has been torn laterally, or when the fibres which pass under and behind the rectum have become relaxed, it will be better, instead of removing the apex of the triangle in the median line, to remove a strip on either side of the rectum, something like those removed in Freund's operation, and thus draw up deeper fibres of the levator ani. They may be removed and sewed up immediately, *i. e.*, before the rest of the figure, as Martin does in his "*Elytrorrhaphia duplex lateralis*," and may go with all the varieties of the anterior denudations mentioned.

Since becoming accustomed to these forms of denudation I have found it also more convenient to denude the apex of the triangle first and sew it up before denuding the rest of the figure, thus saving the loss of considerable blood. The objection to this consists in the difficulty in knowing, in the beginning, how far up the vagina to carry the denudation.

The tranverse denudation is for shortening or reattaching the fibres of the levator ani which pass from the pubic rami forward to the perineal body and lift that body, while the antero-posterior denudations shorten or raise those that pass more directly towards the median line under the vagina and rectum, and thus lift the pelvic floor and posterior vaginal wall (Plate 4). We thus produce the greatest possible effect in raising and strengthening the parts with the least possible loss of tissue. The uniting of separated fascia and fixation of the vagina to its connective tissue is attained at the same time that the muscles are shortened. The transverse strip not only raises the perineum but attaches it to the pelvic floor, on either side of the rectum. The stitches must be passed deep into the sides or edges of the denuded figures, but should not include their middle sections, since that would bind down instead of raising up the parts. When the parts have been previously injured, and are traversed by cicatrices, the form of denudation must, of course, be modified to suit the case, viz.: to remove the cicatrices and restore the injured tissues to their natural relations. The operation should be suited to the particular case, and not the case suited to a particular operation. The old notions of building a pyramid which never existed; of constructing a firm triangle in the median line, where a firm triangle must be a pathological condition; of projecting a huge rigid cicatrix between the elastic walls of the rectum and vagina, to run the risk of being gradually melted away by time and traction; or of cutting away, instead of replacing, prolapsed masses, are the crude methods of an age of transition, and continue to live, not as useful remedies, only for want of something better.

If the anterior wall of the vagina be much loosened anterior elytrorrhaphy should also be performed as an important, if not necessary, part of the cure.

The patient, after all plastic operations for retroversion, should be kept in bed, but not be allowed to lie on the back for two weeks. It goes without saying that should such plastic operations be undertaken indiscriminately, failure must be the result. The main part of the cure must be made before this nearly mechanical part, viz.: the restoration of natural checks upon the motions, and hindrances to the falling over backwards, of the womb.

To the criticism that I am producing an unnatural state of things by thus elevating the perineum and recto-vaginal promontory, I must answer that I have seen many well developed patients in whom the promontory and portions of the perineum were naturally thus elevated without inconvenience either before or after marriage, and that I am imitating

nature by taking the perinea of such women as models for the operation.

The anterior vaginal or cervical walls may be stitched to the posterior vaginal walls, as a preliminary or first step in performing the above described operation, if the case be unusually unpromising or complicated, and the patient be beyond childbearing.

The denudations should be made where the walls come together after the uterus has been anteverted and the cervix pushed well back, and need not be as extensive as in the Le Fort operation for prolapse. Occlusion of the vaginal canal must, of course, be avoided.

This brings us to the combination methods. The Alexander operation is nearly always combined with support by a pessary for a few weeks or months. It should often be preceded by a plastic operation either for raising or restoring the perineum and recto-vaginal promontory. Other combinations may be devised, some fanciful and some practical. The posterior cervical and vaginal surfaces may be united and a Harry Sims or Gehrung pessary be used to hold the uterus in place until the union is firm and the tendency to retroversion diminished. The abdominal section operations may be supplemented by plastic operations or pessaries. Both walls of the cervix may be stitched to the posterior vaginal wall, before and behind, or the cervix may be stitched posteriorly and laterally to the vagina.

The Fitch, Studley, Schultze's figure eight, and sleigh pessaries, the Hurd, Fowler, Fritsch and Woodward patterns, Martin's eccentric ring, cotton plugs used as recommended by Thomas, etc., are more or less perfect examples of combined traction behind and support in front. They are indicated when the upper surroundings and supports of the uterus are tender, and motion of the organ is to be limited by a firm hold upon the cervix.

In conclusion it must be said that such mechanical treatment as a routine and sole remedy for retroversion is only exceptionally curative, since the original cause and its accompanying or resulting pathological conditions, if still present, tend to break down all barriers and tear loose all attachments.

MEDICAL PROGRESS.

ALBUMINURIA DEVELOPED EXPERIMENTALLY IN MAN.—SCHREIBER has studied in man the effects produced by compression of the thorax, or of a portion of that cavity, the pressure being exerted by means of cushions applied to the anterior and posterior walls of the chest, and regulated by screws. Among twenty-six people he found twenty in whom the compression developed a temporary albuminuria, or increased a preëxisting albuminuria. In a general way the degree of albuminuria varied with the duration of the compression, while some experiments showed that the daily quantity of urine was slightly diminished under the influence of compression. Most frequently the reaction of the urine was acid or neutral, rarely alkaline. Microscopic examination was made in only a small number of cases, and once a few hyaline casts, and once a few red blood corpuscles, were found. The albuminuria is due to the presence of serum-albumen and globulin, and peptones are also present. Its duration was one or several hours, all that was needed to prolong it being a repetition of the compression several times in the course of the day. Schreiber does not consider this albuminuria due to dyspnœa. He believes that its causes are: The diminution of the difference which normally exists between the pressure in the capillaries of the alveoli of the lungs and in the left ventricle; the diminution in the calibre of the pulmonary vessels; the diminution of the extent of the respiratory excursions. From these there results a stasis in the pulmonary circulation, which is rapidly propagated into the vascular network of the kidneys, and hence the filtration of albumen. Whether this filtration occurs in the Malpighian corpuscles, or in the convoluted tubules, he has not yet determined.

In a second memoir M. Schreiber states that in boys of 11 to 15 years thoracic compression for half a minute sufficed in eight out of ten cases to provoke albuminuria (⅓ to ½ per cent.), of which, in general, there is no trace at the end of an hour. In their case he found neither peptones nor serum-albuminose in the urine, but only serum-albumen and globulin. The ophthalmoscope showed that the albuminuria was accompanied by no modification of the size or of the color of the vessels in the fundus of the eye.—*Revue des Sci. Méd.*, Jan., 1886; *Glasgow Med. Journ.*, May, 1886.

BROMIDIA.—In the April number of the *Edinburgh Medical Journal* J. LINDSAY PORTEOUS, M.D., F.R.C.S., M.R.C.P.Ed., says: "Of late there has been a great influx of new drugs, some of great value, others of little or no use. Where a medical man has an extensive practice, consisting of rural and urban patients, he has ample opportunity of testing the effects of drugs, as the varieties of disease that come under his notice are great; and although his means of watching the actions of drugs are not so good as in hospital practice, yet a good deal can be done if he cares to take a little trouble to 'take notes.' The following is one which has been used for some time by my colleague (Dr. Proudfoot) and myself, and I give the results: About eighteen months ago a friend of mine from America told me of the wonderful effects of a medicine, much used in the States, called *bromidia*. According to the makers, it is composed of chloral hydrate, 15 gr; cannabis indica, ⅛ gr.; and extract of hyoscyamus, ⅛ gr. I obtained some, have ordered it regularly for over a year, and have found it excellent in the pain of rheumatism, pneumonia, and cancer; also in the sleeplessness of scarlatina and alcoholism. It has never failed me in procuring sleep, without the disagreeable dreams and after-effects of opium. The dose is ℥ss to ℥j every hour till sleep is procured. I have also found it of much service in cases of tonsillitis, used as a gargle with glycerin and carbolic acid."—*N. Y. Medical Journal.*

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, AUGUST 7, 1886.

ARE OUR OBSTETRICAL PRINCIPLES UNSCIENTIFIC?

It is not infrequent that we read papers based on twenty or twenty-five cases, and even less, in which not only are legitimate conclusions drawn, but in which also something of real value is added to our stock of knowledge. But it must be admitted that there is a wide difference between seeing facts and drawing proper conclusions from them—between observation and generalization. It must also be admitted that one who has a moderate, or even unusual, degree of success in practice should not jump to the conclusion that all those who differ with him both in practice and theory are wrong, and that their practice and theory are unscientific. Yet the literature of science is full of such erroneous deductions.

In some recent numbers of *New York Medical Journal*, is an article by DR. HIRAM CORSON, of Conshohocken, Pa., entitled "The Statistics of Three Thousand and Thirty-six cases of Labor," which was read for the author by Dr. Goodell before the Obstetrical Society of Philadelphia, on April 1, 1886. With such an experience it would be supposed that the author would at least be able to draw certain conclusions which would be of positive value to the young obstetrician, and which would be interesting, if not new, to the teachers of this branch of medicine. Unfortunately the paper is not logically sequential, nor is it rhetorically connected, and for these reasons it is sometimes difficult to follow the thread of the argument. But anyone may follow it sufficiently close to ascertain (?) that while in other branches of medicine marked progress has been made in the past fifty years, we have advanced backwards (so to speak) in obstetrics. We learn that Credé method of treating the third stage of labor, the teachings as to the value of antiseptics in midwifery, of the treatment of post-partum hæmorrhage, puerperal eclampsia, and the usually acknowledged principles regarding the use of the obstetrical forceps, are not only wrong but absurd, and that the teachers of obstetrics, especially those who have charge of large lying-in hospitals and who write and teach most, are misleading the profession; and we are left to infer that parturition is always the same physiological process, whether the patient be a strong country woman or a delicate and often badly nourished resident of a city.

"Are antiseptic solutions, when thrown into the vagina and uterus, safe?" Such is the question which the author asks, and to which he replies: "I do not know." It is then proper to inquire why he should have taken the trouble to discuss antiseptics to the length of two pages and a half. He tells us that he has never used them in his three thousand and thirty-six cases, and yet, after taking the most extreme views of the advocates and opponents of antiseptic midwifery, he hastens to the conclusion that it (and by it he understands the use of a *one to twenty* solution of carbolic acid!) is dangerous. He assumes a widespread belief on the part of teachers and obstetricians that there is an absolute necessity to practise the rigid rules looking to a *speedy* termination of every stage of labor by *forcible* means; and in view of this assumed belief he asks: Is labor a natural process? To this we may reply with another question: If labor be the natural process which you assume, why is it necessary to call in a physician at all? And we may also ask: Are human beings to-day natural? Is not our whole life, in civilized countries, artificial? "It appears to me that many persons who report the doings of foreign hospitals and urge their adoption here, and know little of its danger, assume a great responsibility, indeed, sometimes imperil the health, if not the lives of those on whom such measures are practised," says Dr. Corson. Yet we have just seen that he has never used these measures which he decries, and which he clearly does not understand. Had he carefully read the statistics of the Rotunda Hospital, and of many other hospitals, and had he seen the article by Dohrn giving the statistics of forty-three public maternity hospitals in Germany, we doubt if he would have written such unmodified sentences.

The precise object of Dr. Corson's semi-polemic against the forceps is not clear. He tells us that he used forceps thirty-one times, though he does not say under what conditions or indications he used them. It was a few years ago that he learned that forceps

were being used more frequently than "twenty years ago, and that this was done in the early part of labor, not because Nature was inadequate to the work, but because the physician had never hurt *himself* by using the instruments," etc. It may be remarked that the usual indications are cases in which the ordinary forces are insufficient to overcome the obstacles to delivery; and cases in which speedy delivery is demanded in the interest of either the mother or child, or both. As regards the imaginary misuse of this instrument, we would recommend a careful reading of the third edition of Emmet's "Principles and Practice of Gynecology," in which the opponent of the instrument will find much to think of. That an unskilled person may do injury with it is not to be questioned; but the same is true of the catheter. And we would quote the following from Lusk's masterly work: "It will be seen that forceps is not alone indicated in the presence of perils fully developed, but is of still greater service as a prophylactic against the dangers of an unruly second stage." It is not wise in the exuberance of sarcasm to make unscientific statements: if our author has learned that forceps are used in the early part of labor (by which he probably means their use at the brim of the pelvis) because the physician had never hurt himself, or because he had another engagement, he has received instruction from a very unwise teacher.

The section on Credé's method of expressing the placenta reads as though it were intended for the exaggeration of pleasantry, and is none the less amusing even if we know that it was not so intended. So far as we have been able to discover the learned promulgator of this method of placental expression says nothing about "pouncing" upon the woman and pressing the womb to the bottom of the pelvis, as Dr. Corson would have us believe, nor does he advance the rather original idea that the hollow of the hand can make a dent in the uterus through the abdominal walls, and thus *push out* the placenta. It is possible to carry out this method to the letter without "pushing the womb down to the very perinæum." Those who are conversant with the method know that Credé lays very great stress on the *avoidance* of violence in the practice of his method. Where, then, did Dr. Corson get his ideas of the method? Should he care to inform himself fully on this subject we would call his attention to an article in the April, 1885, number of the *American Journal of Obstetrics*, in which Dr. Baruch very clearly points out the mistaken ideas as to this method. To the untaught teachers of modern midwifery it seems to have certain advantages over waiting half an hour for a quarter of a grain of morphine (internally) to act in a case of hour-glass contraction.

Before the advent of the faith-cure it would have been difficult to fully understand how the imagination of a parturient woman could prevent or suppress *post-partum* hæmorrhage; and it is almost as difficult to understand now. Perhaps, however, it is because few physicians have the power of exercising that effect on the mind which, transmitted to the blood-vessels, will cause a contraction of the vascular walls, and thus a cessation of hæmorrhage. Be this as it may, very many practitioners of obstetrics, even before they have delivered three *hundred* women, do encounter cases of serious and alarming hæmorrhage, controllable neither by laying the hand on the abdomen, giving ergot, nor by stimulation of the imagination and excitation of faith. But here again, we are told that Dr. Corson has never had a case of alarming hæmorrhage in his practice; so that we may well inquire if a "confident, assuring manner in the physician" would be so potent if one did occur in his practice?.

If the author's success in the treatment of puerperal eclampsia has been somewhat phenomenal, his ideas as to its pathology may certainly be considered unique. Temporarily accepting the uræmic theory, and supposing that there is a certain amount of urea in the blood which is poisonous, he would resort to venesection, and "remove with the blood so much of the urea that the remainder could not exercise a toxic effect sufficient to produce convulsions." Among his three thousand and more cases he had only ten cases of puerperal convulsions, all of which recovered. The treatment which he recommends for puerperal eclampsia is that upon which a small book was written about three years ago, by Dr. Ezra Mechener, of Pennsylvania—free venesection; to which Dr. Corson adds the pouring of cold water over the head, and the use of morphine internally. While there can be no doubt that venesection is positively indicated in some cases of puerperal eclampsia, we fear that one who resorts to it too frequently is possibly unacquainted with the use of morphine hypodermatically, especially when he uses this drug internally. It is to be questioned if modern teachers, however Teutonic they may be, will agree with him in saying: Suppose it to be true that a certain amount of urea in the blood is poisonous, venesection would then be my remedy. Puerperal fever and septicæmic fever he has never seen, and he remarks that if puerperal fever is a disease "different from peritonitis I know nothing of it."

It is with sincere regret that we have found it

necessary to notice this somewhat remarkable paper at such length? but when it is taken into consideration that it was read before one of the most prominent obstetrical societies in the country without a remonstrance on the part of the members, that it has been published in a prominent medical journal, will go abroad, and may be accepted in Europe as a typical American paper, we feel it our duty to enter a protest. What, for example, will be Credés idea of American obstetrics and obstetricians should he chance to read the description of his method of placental expression? We can only hope that the paper will escape the notice of such men as Carl Braun, Tarnier, Duncan, Felsenreich, Schauta, Pajot, Berry Hart, Playfair, Lombe Atthill, Champneys, and one or two hundred other obstetricians.

Since writing the above we have found in the *New York Medical Monthly* of July, 1886, a paper by Dr. H. C. Coe, of New York, in which he has taken the same ground as the foregoing. We are glad to see that the attention of a scientific obstetrician and pathologist has been drawn to the paper, and it still further pleases us that we have the endorsement of Dr. Coe. He concludes his paper as follows: "We are happy to say that, so far as our inquiries have extended, Dr. Corson's opinions are *not* those of the men who endeavor to keep abreast of modern thought. Unfortunately, foreign readers may not understand this, and thus the profession as a whole will be charged with holding views which do small credit to our present enlightenment."

NEWSPAPER REMEDIES AND THE PUBLIC.

About a week ago a newspaper in this city published a sensational account of the alleged marvelous results of the treatment of diphtheria with spirits of turpentine. The dose for adults was given as a tablespoonful, and for children a teaspoonful, to be repeated several times during the day. That article has borne its legitimate fruit. One child has been placed in imminent danger of its life from the action of the turpentine on the kidneys, and an old woman has been made sick enough to regret she took the advice of the paper. There was no diphtheria in either case, though such was the diagnosis of an officious ignoramus, and turpentine was used solely on the recommendation of the newspaper. The article in question was given a prominent place in the paper, and one or two days afterwards the same paper contained the statement of a druggist that dangerous results might follow the use of turpentine; but this correction was placed in an out-of-the-way portion of the paper, and no prominence given to the fact.

This is not the first time that innocent and ignorant people have suffered from a misplaced confidence in the stupidity of newspapers. It is very common for papers to give marvelous accounts of cures effected by improbable and dangerous methods of treatment, without pointing out that the methods are dangerous, and proving the assertions by foolish letters which assure the reader that the doctors were mistaken in the cases, and finally gave the patients up. The legitimate sphere of a newspaper is to give the news, revised and "doctored" to suit the varying tastes of their readers, and to print scandals which are unfit to go into the homes of decent people. But while improving the morals of the community they have no right to endanger the health of any one, for by doing this they interfere with the quacks who contribute so largely to their support. Simply as a matter of business, therefore, they should endeavor to sin no more in this manner. Could the person who clipped that article have been made to take all the turpentine swallowed by the woman and child he would probably not be in such haste to give medical advice again. It was an offense against public health, though unfortunately it cannot be reached by the law.

The average reader places a great deal of confidence in the newspaper; the more so when his education is practically limited to an ability to read. And the average man is by no means chary of taking all manner of risks with his life and health, for the cure of imaginary complaints. It is somewhat inconsistent for a newspaper to talk about the dangers of impure water in one column and advise people to take poison in the next, and that too on an assumed diagnosis. It is not always that a physician can diagnosticate *the* disease when he first sees the patient; and other people can't be expected to do better than this. There is something very mysterious about the amount of medical knowledge possessed by old women, uneducated people generally —and journalists. It is an especially noticeable fact that the more ignorant a person, and the less common sense he has, the more infallible remedies he can recommend. Could they be induced to take all their remedies at one sitting the country would probably be less populous, but it would be better off.

Cholera Mortality in 1885.—It is reliably estimated that not less than 100,000 deaths were caused in Spain by cholera last summer, more than 2,000 in France, and over 4,000 in Italy and its provinces.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, July 6, 1886.

THE PRESIDENT, E. J. DOERING, M.D., IN THE CHAIR.

DR. CHARLES T. PARKES reported a case of

(*a*) URINARY FISTULA OF 12 YEARS' STANDING, FROM GUNSHOT WOUND, WITH SPECIMEN.

(*b*) THIRTY POUND MULTILOCULAR OVARIAN CYST, JELLY CONTENTS, WITH SPECIMEN.

(*c*) LAPAROTOMY FOR MULTIPLE HYDATIDS OF THE ABDOMEN, WITH SPECIMEN.

In regard to the first case, the track of the bullet had been such that the urine could escape through the wound on the thigh. Several unsuccessful attempts had been made to close the fistula. While examining the bladder with a sound Dr. Parkes discovered a stone. Lithotomy was performed, and now the patient urinates per urethram, and the fistula is closing. The calculus was size of pullet's egg, and the nucleus consisted of a piece of bone. Dr. Parkes also exhibited a thirty pound multilocular ovarian cyst with jelly contents, which had been removed without enlarging original incision. He also exhibited specimens of hydatids of abdomen, connected with liver, spleen and intestines. Exploratory operation had been made, but the hydatids were so numerous, large and adherent that they could not be removed. Patient died of exhaustion. Hydatid of spleen measured 23 inches in circumference.

DR. W. T. BELFIELD said: The case in which I am particularly interested is the one in which the stone was found in the bladder. I congratulate Dr. Parkes on his discovery of that stone, because the case had been a reproach to surgery for twenty years. I once saw the patient who was kind enough to perform for my benefit, and threw a stream some little distance through the fistula in the thigh. Probably the stone was overlooked from the fact that it was situated pretty high up, attached to the upper wall of the bladder. I recently had a case in which stones weighing 2½ ounces had been carried by the man for eight years; he had been sounded a number of times, once under chloroform, but with negative result every time. In that case I found one of the stones attached to the fundus of the bladder, the other ensconced behind an enlarged prostate.

DR. R. G. BOGUE said: Mr. President, the cases presented are of a great deal of interest. Probably the most interesting feature of the case of stone in the bladder was the discovery of the offending body and its removal. The strange paths that bullets take in their course through the body, or a portion of it, were found to be so various by those who have had opportunities for observation during the war, that the fact of this bullet passing into the side of the thigh, wounding the bladder and passing out through the peritoneum, was not so very strange; but the repair which took place in the track of the bullet, the lodgment of the large fragment of bone such as we see here, within the bladder where it remained for so long a time without giving a great deal of trouble, is somewhat singular, and the long experience that the man had in seeking relief, or cure, without avail, and the probably accidental discovery of the real difficulty and the cure by removal of the stone, renders the case one of a good deal of interest. The case of hydatid cysts is also of much interest. Hydatid cysts are comparatively rare, although in hospitals where a great many post-mortems are made they are frequently found; in many instances they give so little trouble during their growth that they are only found upon post-mortem examination as an accidental affair, the liver being the seat of the great proportion of instances of their development. In looking over the first volume of the catalogue of the museum of St. George's Hospital, of London, I find that there are eighteen specimens of hydatid cysts mentioned, one of the lungs in a lad who had had chronic cough for some two years, subsided after he had expectorated anhydatid cyst. All the other hydatids developed from the liver; one was a case of multiple cyst where a large cyst had developed upon the superior surface of the liver causing absorption of the diaphragm, entering the thoracic cavity and becoming adherent to the right lung; the abdomen was quite filled with tumors attached to the omentum, the spleen, the kidney, and the under surface of the liver and some to the peritoneal surfaces. In this case there had been, no doubt, a ruptured cyst, as the young man had fallen while at play and the accident was followed by severe symptoms of prostration or collapse, with recognized peritonitis, from which he finally recovered, but afterwards died of erysipelas. The tumors in the abdomen had been diagnosticated some two years previously, but the death was from cause other than that connected with the growths themselves, and the revelation upon post-mortem was that of extensive hydatid disease, the greater part being connected with the liver. All of the other instances of hydatids were of the abdomen, connected with some portion of the liver, either within the organ or upon its surface, so that in all of these eighteen cases the specimens were from the liver or within the abdomen, having the liver for their primary seat, with the exception of the one in the lung.

DR. J. S. JEWELL said he had been deeply interested in listening to the cases reported by Dr. Parkes, but most especially in the cases of urinary fistula. He thought in such cases as stone in the bladder, as well as all others, there should be the most thorough and careful investigation. When one undertakes to explore the bladder for stone, cases like this ought to be held in mind. He suspected that in the case in question Dr. Parkes was pretty nearly giving up the examination with the sound when he made the last sweep that brought the stone to light. He was impressed with the necessity for more thorough work than is usually given in the matter of diagnosis. He was becoming more careful every day, as a matter of habit and duty. In studying cases, apparently the most simple, one of ten finds, where they least suspect it, remarkable things. He thought there was

too much hap-hazard diagnosis to produce first-class work, and this case is an example of it, for if Dr. Parkes could find the stone, others should have done so.

Dr. C. T. Parkes in closing the disscussion said, Dr. Jewell is correct in his supposition, that it was by a mere accident that I found this stone. Perhaps I neglected to say there is no tissue in the body that is free from this parasite; there are only certain places in the body where it is found with the absence of an adventitious sac, but some, especially those found in the brain, are usually cysts with but two layers, the terminal membrane and the external layer. There are many things that seem to refer their formation and development to the circulation of the broad cells through the blood, and there are many things that seem to show that this cannot be possible.

Dr. Henry T. Byford read a paper entitled

THE MECHANICAL TREATMENT OF RETROFLEXION OF THE UTERUS.

(See page 147.)

Dr. H. P. Merriman said: I have been very much interested in the paper, which I think is a valuable one. It seems to deal not merely with the subject of pessaries, but with the various means of support in the case of retroversion. I think a great many physicians, when they find a retroversion, without stopping to consider its cause, at once feel that it is necessary to employ a pessary, and in a great majority of instances the use is followed by failure to cure. We all know that retroversion of the uterus has more than one cause; it is due in a great many cases to pressure from above, to weight within the uterus itself, as in the case of a fibroid tumor; the use of the pessary in these cases is of no value—it is only when there has been a weakening of the supports. In the case of weakened ligaments the pessary is of value as a temporary expedient. When the retroversion is due to a weakened vaginal support, which is true in the great majority of cases, for when we find the perineum ruptured, even partially, we are going to have, sooner or later, a retroversion. We find pessaries valuable in these cases, though, as a rule, we should not depend upon them permanently, because we need to restore the vaginal supports by some kind of operation, such an operation as restoring the perineum and curing a rectocele or cystocele, or by the general operative procedures Dr. Byford has mentioned. It strikes me that what we need in nearly every case is to examine the vagina and restore it to its proper shape and position. The uterus is retroverted because the vaginal support is gone, the wall of the vagina has become relaxed and is letting down the uterus, and we want to restore that wall of the vagina. If there has been a ruptured perineum you must restore the perineum, if there has not been we may be able to restore the uterus, and by keeping it in place for six months or a year regain the support of the rested vagina. This will be done in a little different way from what Dr. Byford has suggested. We have got to fit something to the vagina that will extend the posterior wall and push up the cul-de-sac back of the uterus. We cannot do that where there is tenderness, or where there is a tumor; but where there is not, and it is merely a simple retroversion, then it will be necessary to fit the pessary to the vagina and have it fit in such a way as to elongate and support the vagina in a natural shape. It always distresses me when I hear men speak of fitting a pessary to the uterus. I do not believe it should be fitted to the uterus. It should be fitted to the vagina; the object is to restore the vagina to its natural position, and we must choose a pessary especially adapted for that purpose, and it should lie easily in the vagina.

Dr. William Byford said: Mr. President, I came here with the determination of not speaking upon this subject to-night, because the scope of the paper is so great that if I were to undertake to comment upon half the points it would take too long. I believe the principles of the paper are correct for the treatment of this form of displacement of the uterus, especially the one of acting upon the cervix. My impression is that in retroversion of the uterus there is stretching of the utero-sacral ligaments until they are relaxed, and we find connected with it relaxation of the vagina, which I think is more frequently the consequence than the cause.

Dr. Franklin H. Martin asked Dr. Byford what advantages he claims for his pessary over the German sleigh pessary? If the fulcrum of this pessary is as indicated in the large diagram, situated at a low point on the posterior vaginal wall, how is he going to get any support for his fulcrum in a case of lacerated perineum? His illustration represents the fulcrum resting very low in the vagina, and it would have no support if the perineum is even partially lacerated.

Dr. T. D. Fitch said: Dr. Merriman thinks supports for the uterus are abused. I think so also; they are abused because practitioners do not take the trouble to enlighten themselves with regard to the use of these mechanical supports, but when they get a case that requires a mechanical support they go ahead thoughtlessly to adjust a pessary of the latest device to support a displaced uterus. If from different causes the uterus has become displaced, do not the uterine ligaments become weakened as the result of that displacement? You never have a case of displacement that the uterine supports do not become weakened and relaxed, and can you tone up a muscle or a ligament that is placed upon the stretch to its utmost capacity, by any means, while in this tense condition? It is impossible. We must assist those ligaments to regain their tone by these mechanical supports, relax the ligaments, give them rest, and then by local and general treatment give them tonicity. Having done this you can remove your artificial supports. I fully endorse what Dr. Merriman says with regard to fitting the pessary to the uterus. The pessary should conform to the normal form of the vagina, and that is why we have to have this flexible material so that we can bend them by heat and make them fit the different shaped vaginæ. I do not approve, as a rule, of the principle of leverage. And that is why so many physicians fail in the use of Hodge's pessary; the leverage is too great. The pressure is so great in using this leverage that abrasion occurs, and laceration and cutting through the

tissues. Pessaries should never be fitted in such a way as to produce abrasion, laceration or cutting through the tissues. They should not press hard; they should distend the vagina to its normal length, especially, not its normal breadth, and this can be done without much pressure where the uterus is replaced so the fundus falls forward so as to be in front of the transverse axis of the uterus at the junction of the cervix with the body. If it is thoroughly replaced, then you do not get much pressure when you introduce the pessary. It requires little force to hold the cervix back, and I believe in the majority of cases that here is where the general practitioner fails, viz.: in getting the fundus thoroughly forward, and uterus replaced. Many times it is half raised up and the pessary presses against the body of the uterus so hard that it will imbed its whole thickness in the body of the uterus, producing inflammation.

I have frequently held the sound in the uterus and held the uterus up thoroughly anteverted, or thoroughly at right angles with the vagina and introduced the pessary over the sound so as to secure thorough replacement of the uterus. I believe in the use of the pessary not only as a support to the uterus, but as a splint to the vagina, for if the vagina is kept in its normal position the uterus will necessarily be kept in its natural position. The ideal pessary, in my opinion, is the pessary of Hodge. Emmett's pessary will fit more vaginas than Hodge's or Smith's, the latter differing from Hodge's in that its vulval extremity is narrow instead of broad, Hodge's is broad while Smith's and Emmett's are both narrow at the lower extremity and are supported by the walls of the vagina. Emmett's is much better than Smith's, is much larger, and therefore much less liable to press too hard upon tissues. The pessary of Dr. Byford which he has introduced to-night, is the form which I have improvised extemporaneously for myself, and used in several cases. I had six cases where the tissues in the posterior vaginal junction were so sensitive that it was impossible to use a Hodge, Smith, or Emmett. So I took the ordinary pessary of Hodge or Smith, and bent it in the form of a Byford pessary, and found I could use it where I could not use the others. There is an objection to placing this pressure upon the anterior surface of the cervix with a firm unyielding instrument, and I don't believe that Dr. Byford's pessary will entirely remove that difficulty. He has stated in his paper that there is in a great many cases an absence of the anterior lip of the cervix uteri; there is not sufficient of it to be received on this instrument and to be held, its slips off and down in front of the instrument. This is not the only objection, I have found that while the pressure is brought upon the anterior surface of the cervix by the edges on my instrument, it so interferes with the circulation that the anterior lip will become swollen and œdematous. In his instrument there is no ring for the cervix to become imprisoned upon, this is certainly a thing most to be desired where there is an ulceration or laceration existing. If the pressure could be divided between the posterior vaginal junction and the anterior surface of the cervix, the œdema would be much less than where the whole uterus was held up by the pessary. These pessaries, Byford's and mine, are certainly very strongly indicated in cases where there is great tenderness in the cul-de-sac. A prolapsed ovary with a retroverted uterus may fall down into the cul-de-sac of Douglass and no pressure can be borne there at all, and in such cases the only pessary that can be used with success is one that brings the pressure to bear upon the anterior surface of the cervix uteri.

DR. SARAH H. STEVENSON said, I would like to ask how to treat cases in which the fundus lies high and in which the pressure upon the surface has no effect whatever. Where the fundus is low there is no difficulty. It is very easy to cure that sort of retroversion, but where the fundus is high I do not know how to treat the case.

DR. HENRY T. BYFORD said in closing this discussion, I think it is wrong to say that pessaries are fitted to the vagina; they may be fitted either to the vagina, uterus, or pelvic floor, or all three. In regard to the bearing of this instrument, it forms almost a semi-circle in which the cervix fits loosely and does not get directly pressed upon. It also makes a good support for a uterus that is not retroverted, but which rests on the pelvic floor. I have a case of bilateral laceration with eversion to the third degree, in which after this pessary was applied to the extensive ulceration due to friction upon the pelvic floor, got well in three weeks. I have a case of fibroid tumor in which the uterus lay directly across the pelvic, the right horn on a level with the cervix, but which is held about straight by this pessary modified by having one shoulder lifted, thus giving the patient back her former comfort. In regard to Dr. Martin's question—in the case of laceration just mentioned the levator vaginæ portion of the levator ani seem ruptured or relaxed, and leaves a large vaginal outlet, and yet a good sized instrument is retained. A large instrument is of course required for a large uterus or a relaxed vagina. You can change the position of the fulcrum by changing the curve of the arms. The sleigh pessary if reversed looks very much like this one with the handle cut off, but it would require a change in the curve of the arms, and in the neck, before it could be similarly used. My pessary comes the nearest being a perfect representation of one of Dr. Fitch's instruments, which he devised before he became sick, but has not exhibited nntil to-night, and which is a modified Courty's. About the operation, I would like to say that my object in performing it is merely to raise the natural tissues, not to build an artificial support or barrier of fanciful shape; not to remove any more tissue than is absolutely necessary, but to draw the tissues together as much as is possible or desirable. What I have tried to do has been to find the directions of the muscular fibres and shorten them a little, and if they have been torn to reunite them as they were originally. At the same time I have always in mind the gathering up of the loosened connective tissue about the denudation, and I sometimes cut a little deeper at certain points in order to cut into it and make a closer union of tissues.

AMERICAN OTOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held at the Pequot House, New London, Conn., July 20, 1886.

The Society was called to order by the PRESIDENT, J. S. PROUT, M.D., of Brooklyn.

Dr. Friedenburg and Dr. Bartolett were invited to take part in the proceedings of the Society.

DR. SAMUEL SEXTON, of New York, read a paper entitled

ACUTE AND CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT AND THEIR COMPLICATIONS.

The paper was based on the records of 2366 cases. These cases were divisible into three classes: Acute, purulent inflammation of the middle ear (739 cases), acute catarrhal inflammation of the middle ear (245 cases), and chronic purulent inflammation (1382 cases). The consideration of acute catarrhal inflammation was included in the consideration of acute purulent inflammation, since in the beginning the conditions were probably the same, although not always going on to suppuration. Out of this series of cases 131 were selected on account of their gravity. Of this number there were twelve deaths. In no disease of man is a knowledge of regional anatomy more important than in diseases of the middle ear. The speaker gave a thorough resumé of the anatomy of the temporal bone, accepting the description of Prof. Leidy as the most satisfactory. The temporal bone at birth is peculiar in the fact that the tympanum and mastoid antrum are about as large as they ever become in adult life. The petroso-squamosal suture is imperfectly closed.

The symptoms were next referred to. Brain symptoms, such as headache, vertigo, pain, delirium, nausea and vomiting may occur in consequence of middle ear disease without lesion of the cerebral structure.

The prognosis of purulent inflammation of the middle ear is favorable when non-meddlesome treatment is adopted, both as regards life and the preservation of hearing. Out of twenty thousand cases of ear disease, where the patient has been seen at the beginning of the attack, no fatal case has occurred. Cases which have come under observation after severe symptoms have appeared, have given twelve deaths. Some of the fatal cases occurred long after the ear trouble had abated.

In regard to treatment, the speaker recommended incision of the drum-head. Trephining of the mastoid process has been recommended by some authorities. Dr. Sexton took up a consideration of the indications which have been regarded as calling for the application of the trephine, and held that they were insufficient. From his experience, he was led to believe that drainage could be best maintained through the natural channel.

DR. SEXTON also described a

NEW OPERATION FOR THE RADICAL CURE OF A PURULENT INFLAMMATION OF THE MIDDLE EAR TRACT.

Since describing a form of chronic purulent inflammation of the attic, in a paper read before the Society last year, it had occurred to him that something might be done with these cases by means of an operation. It seems especially desirable to cure these cases, when the ear remains simply a reservoir for purulent matter, liable at all times to infect the system. It is found that in the greater number of these cases the remaining portion of the conducting mechanism no longer serves to aid in the transmission of sound, but acts rather as an obstruction to drainage. Where the membrana flaccida and a portion of the ossicular chain only remain, the former often becomes thickened and everted, forming, with the altered mucous membrane, a pouch for the retention of putrescent matters which may slowly escape. Where granulation tissue or polypoid growths are present in the attic or antrum, the escape of secretions is still further interfered with. This produces long-continued and great irritation.

The author had observed that in a number of cases where the transmitting mechanism has been lost a cure followed, and it occurred to him that the curative action of nature might be imitated with advantage. Where drainage from the attic and antrum is interrupted a cure can only be assured by an operation permanently clearing the passage outward from the tympanum.

Last year the operation was tried on a long-standing case of otorrhœa due to chronic purulent inflammation of the attic. In order to avoid the danger of using an ordinary lamp in connection with the administration of ether, an electric light was used. The operation has since then been fully performed in several cases.

The first step of the procedure is to separate the membrana flaccida from the edge of the auditory plate, and to remove any portion of the membrana vibrans adherent to the auditory ring. If the malleus and incus remain *in situ*, it is well to divide the tendon of the tensor tympani muscle when present, where it leaves the handle just behind the short process and below the chorda tympani. The chorda tympani, when remaining, is then divided where it enters the tympanum at the pyramid, and also at its exit into the canal of Hugier. The long process of the malleus, being also received into the glenoid fissure by means of this short oblique canal, along with the chorda, may be more or less detached at the same time. The detached tissues and ossicles should now be removed with the forceps. It will frequently be found that the incus, having been displaced, still remains. It may be removed with the attic scraper, which is to be introduced from below and passed up along the inner wall of the tympanum, when the distal extremity may be carried over the incus or malleus, if the latter bone remains, and by traction the ossicles can be detached; polypoid masses, granulation tissue, and the products of inflammation may now be removed with the cutting curette or cutting forceps, and the parts dressed with a four per cent. solution of cocaine to relieve pain.

There is usually free bleeding during the operation, often sufficient to protract it and increase its difficulties.

The effect of injury or destruction of the chorda tympani nearly always manifests itself in some way,

but had never in his experience been a matter of serious import. Disturbances of taste sometimes follow the operation, but they gradually disappear and leave the sense of tasted unaffected.

The drum should be kept well cleansed and light dressings of boracic acid applied until healing takes place. The salicylic acid powder may be applied as freely as can be borne. In some cases this is irritating at first, but tolerance is soon established. It may then be kept up until the parts cease to discharge.

In the cure resulting from this treatment, a dermic transformation of the tympanum takes place, but mucus may occasionally gain admission from the Eustachian tube during recurrent head catarrh or on blowing the nose. This should be frequently removed with cotton wool, and if necessary the drying applications renewed for a time.

Where the incuso-stapedial connection remains, I should not hesitate to perform this operation, unless a very considerable portion of the membrana vibrans was present.

The instruments employed and some of the diseased ossicles removed, were exhibited.

DR. C. R. AGNEW, of New York. said: Where the inflammation has come to involve the mastoid cells, I think that some portion of the external wall of the mastoid should be removed. The objection to the trephine is that it does not expose a sufficient area of the cancellated tissue of the mastoid. I do not see how the new operation which has been described will be of service in these cases.

DR. SEXTON: The new operation I recommended only in chronic cases.

DR. H. KNAPP, of New York: The upper tympanic pneumatic cells resemble, to a certain degree, the frontal sinuses. These have a direct natural drainage through the infundibulum into the nose. When this is closed by disease, the lateral part of the sinus over the orbit dilates and the cavity is more easily reached and more effective drainage is obtained by opening the sinus from the orbit. In a like manner, we obtain in most cases easier and more effective drainage of the supra-tympanic cells by opening the mastoid cells with which they communicate.

DR. A. H. BUCK, of New York, read a paper on

PAINLESS AND ONLY SLIGHTLY PAINFUL ULCERATION OF THE MEMBRANA TYMPANI, PROBABLY OF TUBERCULAR NATURE.

The speaker stated that the recognition of the early stages of tubercular disease was important, and the object of the paper was to call attention to the features by which this could be recognized. Three cases had been seen by the author. The patients were in a condition of fair general health. There was no evidence of pulmonary disease in either of the three cases. Tinnitis and slight impairment of hearing were the first symptoms noticed. In two of the cases, which were examined at an early period, there was slight redness and swelling at the upper part of the membrana tympani and of the skin covering the bony wall. In a short time the infiltration extended into the entire posterior superior quadrant. The membrane became bulging, and at the most prominent point a perforation established itself.

Following this the disease followed a somewhat different course in the different cases. In one case the upper posterior portion of the canal became more congested, as though the bone were the seat of the disease. In the last case there was gradual improvement. The hearing was slightly impaired. In the other two cases discharge became profuse. In one case sudden hæmorrhage from the lungs occurred.

In the incipient stage, the distinguishing features are the tendency to localization in the upper posterior portion of the membrana tympani, the marked insignificance of the pain or even its entire absence, and intolerance to all but the simplest local measures.

DR. E. GREUNING, of New York: I have seen a number of cases in which I was led to infer that the ulceration of the drum-head was due to tuberculosis. I distinctly recall three cases. In one case, that of a young man, only one ear was affected. There was very little purulent discharge. There were two openings, showing that this was not the result of perforation from accumulation. It appeared to be a melting down process. In another case there were multiple openings so that the membrane appeared to be honeycombed.

DR. C. R. AGNEW: I have seen a number of cases in which I supposed that the origin was tuberculosis. In a considerable number of these cases the main lesion has been in the drum-head below the extremity of the handle of the malleus. I recall the case of a young man who had trouble at the apex of both lungs when he came under observation. A short time previous he had begun to have slight ringing and a sense of dullness in the ear. This had gone on for two or three days, and then when blowing his nose, he found that he whistled through his ear. In the ear complained of I found an opening looking as though it had been removed by a punch. The opening was elliptical. Within a few days the same thing occurred in the other ear.

DR. J. A. ANDREWS, of New York: In regard to the presence of the bacillus in middle ear trouble occurring with phthisis, although I have examined a large number of cases, I have never found the bacillus.

DR. BUCK: I have not looked for the bacilli; but even if they are not found, tuberculosis should not be excluded.

DR. J. ORNE GREEN, of Boston: I have been much interested in this paper. When I find this destruction coming on without pain and without discharge, I at once suspect a tubercular diathesis, and I generally find a history of it. I also agree with the speaker that only the very mildest measures can be used. Strong applications make the trouble worse. Twice in cases of advanced tuberculosis I have seen on examining this membrane, little white glistening points about the size of a pin-head, not secreting at all and in one case with no congestion. In both cases the spots disappeared in a few days, and within twenty-four hours there was a little clean punched out opening in the drum membrane. This occurred without any discharge. It seemed to me that I was dealing with isolated tubercles in the tissue of the drum membrane. One of these cases died a few months later from the general disease.

Dr. A. H. Buck also read a paper on

CERTAIN TECHNICAL DETAILS RELATING TO OPERATIONS ON THE MASTOID PROCESS.

The speaker first referred to the objections which had been made to the drill. It has been stated that there is danger of plunging the drill into the lateral sinus or even into the brain. He had, however, found no tendency for the drill to go astray. It had been said that the opening made was too small, but any sized drill might be made. He used a drill one-fourth of an inch in diameter until the antrum was reached, and finished the operation with a smaller drill. This gives a sufficient opening for drainage. Where there is a large sequestrum, it is necessary to make a larger opening. The objections to the use of the chisel were next taken up. When this is used the wound in the adjacent soft parts must be larger, and the opening in the bone is more extensive, leading to a depressed cicatrix. More time is required in the operation and it is not free from danger. A study of the statistics of both methods seems to show that there is nothing to warrant the statement that chisels and gouges are to be greatly preferred to drills in establishing opening into the mastoid process.

In operating with the drill, after making an opening, he cuts out a little canal for the escape of the discharges, for the opening made by the drill is covered by the flap when it comes into position. For the first four or five days after the operation, the wound is irrigated once a day with a bichloride solution, 1–2000.

Dr. Buck said that in his earlier operations, he applied the drill a short distance in front of the vertical line. His present plan is different. A straight vertical incision three inches long is made. By this means he exposed the mastoid process where it curves into the meatus. The drill is then applied to the first flat surface. The only difficulty is in establishing the final communication between the canal and the antrum.

Dr. J. Orne Green: I have used the drill almost entirely. I prefer to make a small opening at first, and I am then guided by what I find. Some cases require a large opening, and in such cases, the gouge and chisel will come into play. In the majority of cases, a small opening is sufficient. In some of these cases the use of the dental engine is very applicable. I have a modification of the engine which may be screwed to a table. It is turned by a handle and any one can furnish the power. No skill is required, as in the engine worked with the treadle. Used in this way, I have found the engine of great service. In the cases which I have operated on, I have put in a drainage-tube and kept it in as long as possible. In the after-treatment I have used a solution of carbolic acid, 1 to 80. Of late years, I have applied an antiseptic gauze dressing and kept that on.

Dr. H. Knapp, of New York: I wish to make some remarks in favor of the chisel. With the chisel, you can at every step observe the condition of the tissue which you are cutting. With the chisel, you have a perfectly smooth surface, rendering it easier to cleanse the wound. It is also very easy to manage the chisel,

Dr. H. D. Noyes, of New York: There is much less danger in the use of the chisel than of the drill. There are often great differences in the anatomical relations of the parts. The lateral sinus is not always found in the same place. With the chisel or the gouge, you explore the part layer by layer, and ascertain how the parts are situated. This is a strong argument in favor of the instrument.

Dr. J. A. Andrews: In my operations, I have always used the chisel, but have always begun with the drill. I believe that the chisel is the best instrument and can be used with more caution than the drill. I always make a large opening, for I believe that a collection of pus should always be given free vent.

Dr. E. Greuning: I have opened the mastoid process seventy-seven times. At first I used the drill, and in acute cases the results were all that could be desired. The drill was, however, not applicable to all cases, and I have since used the chisel. A small opening may be made with the chisel. What can be done with the drill can be done with the chisel.

Dr. Buck: From the direction which the discussion has taken it might appear that I am in antagonism with the chisel. I am not in antagonism with the chisel in those cases where a large portion of bone is to be removed. I leave those out of consideration in my paper. Where a large mass is to be removed, it cannot be removed with the drill. The two instruments cannot come into conflict.

A communication with reference to the organization of *A Congress of American Physicians and Surgeons*, was presented and referred to a committee consisting of Dr. C. R. Agnew, Dr. H. Knapp and Dr. John Green to consider and report at the evening session.

Evening Session.

Dr. H. Knapp, of New York, read a report of a

FATAL TERMINATION OF A CASE OF SCLEROSING MASTOIDITIS AFTER CHISELING OF THE BONE.

A man, aged 50, had extensive suppuration in both ears after scarlet fever in childhood. The right ear became totally deaf, and the left very hard of hearing, became deaf (hearing reduced to a quantitative perception of sound) by a recent attack of dizziness. Dr. Knapp found both tympanic membranes absent, the cavities sclerosed in both, pale in the right but congested in the left ear. Behind the left ear was found a cavity fully an inch deep, lined with immovable skin, the result of former exfoliation of bone. Three weeks later facial paralysis on the left side occurred. It disappeared in two weeks, under steaming and large doses of iodide of potasium. Two weeks later, the patient suffered with constant intense headache and nausea. The mastoid was opened to the depth of half an inch by chiseling. The bone was compact and in the depth, very vascular. During the first two days, the patient was sleepy; could not be aroused on the third and died comatose on the fifth. No autopsy was allowed.

Death was due to traumatic meningitis. In regard to opening the bone in sclerosing mastoiditis, the

prognosis is good when the sclerosis is the result of catarrhal or plastic inflammation, but bad when it was the consequence of old caries or necrosis. There are cases on the border line, and even when the prognosis was bad, the indications might be strong. The operation will rescue a certain number of the otherwise fatal cases.

DR. POMEROY, of New York, reported

A CASE OF ABSCESS OF THE MASTOID CELLS WHERE THE CHIEF INDICATION FOR OPERATION WAS ELEVATION OF TEMPERATURE.

A. S., age 20 years, fairly robust, had a violent attack of otitis of the right ear, which came on Jan. 30, 1886. The following morning, there was free discharge. February 1, he entered the hospital when a large perforation was found; a poultice and warm douches was ordered. By February 4, the membrane looked almost normal. There was some pain in the occiput and a temperature of 103.6. Ten grains of quinine with twenty grains of iodide of potassium to be repeated in three hours was ordered. This was followed by a reduction of two degrees in the temperature. The following day the temperature again went up, and it was apparent that a purulent process was going on. There was no swelling over the mastoid and the pain was no greater than might be expected from a neuralgic condition.

After consultation, it was decided to open the mastoid process. A drill was introduced and from four to six drops of pus evacuated. After the operation the patient continued to improve until he was discharged cured.

DR. J. A. LIPPINCOTT, of Pittsburg: Something over two years ago, I operated in a case of sclerosing mastoiditis which had been suffering intense pain for twelve months, and which did not yield to alterative and tonic treatment. After the operation, the patient remained well for thirteen months. The pain then returned and continued twelve months in spite of all treatment. Last March. a second operation was performed, and a larger opening with the drill made. No benefit was produced.

DR. KNAPP: I should like to state that the cases which I have reported where benefit followed chiseling open a sclerosed mastoid, have remained well.

DR. CHARLES H. BURNETT, of Philadelphia, reported

TWO CASES OF CHRONIC PURULENT INFLAMMATION OF THE ATTIC OF THE TYMPANUM, WITH PERFORATION OF THE MEMBRANA FLACCIDA, TREATED WITH PEROXIDE OF HYDROGEN.

In the first case no application had had the same good effect as the peroxide of hydrogen. Every other medicament had seemed to irritate rather than heal the inflamed mucous membrane. In the second case, the discharge which had been very chronic was promptly checked by the use of the peroxide of hydrogen.

The chemical formula of this drug is H_2O_2, and by its affinity for albuminous matters, especially those of pus, it seeks every particle of this matter, in a cavity like the middle ear, and thoroughly cleanse the parts. The union with pus is shown by a copious foam, whch boils out of the external ear. When the foaming ceases and the peroxide returns clear, the diseased cavity had been thoroughly cleansed. In many cases this seems sufficient to effect a cure. Where there is a perforation in the membrana flaccida, the application is made by means of the tympanic syringe, the long and slender nozzle of which is introduced through the perforation at the attic of the tympanum. The peroxide is used undiluted.

DR. WILLIAM S. LITTLE, of Philadelphia, read a paper entitled

IN THE PHYSIOLOGY OF HEARING IS THERE AN OVERLAPPING OF EACH AUDITORY FIELD THE SAME AS IN BINOCULAR VISION?

Cases of one-sided deafness afford the opportunity of mapping out the auditory field for one ear, and it is found with the watch at two feet from the ear the tick can be heard about ten or fifteen degrees across the median line of the head. This gives more scope to hear sounds produced on the side of the head opposite the good ear. The tuning fork is not heard even up to the median line on the side of the ear tested. The watch has been used in making the observations. If the field of one ear reaches beyond the median line to about ten degrees, we have when both ears are normal, an over-lapping of each field to the extent of fully ten degrees on either side of the median line in front, above and behind the head. Each ear hears in this area of twenty degrees. Outside of this area, each ear hears singly. By means of this, there is no need to turn each ear towards the source of sounds which reach the individual. The direction of sound is best found in this way for safety in walking and maintaining the erect position. Sudden loss of hearing on one side puts the sufferer to great annoyance, as the ability to determine the direction of sounds is in a measure lost, the patient often looking in the wrong place when called. It is fully as perplexing, if not more so than in a case of sudden loss of sight in one eye, making seeing dependent on one organ of vision. The attempt to restore hearing should be directed not only to obtain hearing in a line directly in front of the ear, but also to increase the area of hearing in the affected ear or in both affected ears, till it reaches if possible, the coalescence seen in normal ears.

The literature of the subject of acoution and otology does not give any information on this point. Too close a comparison between the eye and the ear cannot be made. The auditory and optic nerves respond to very different media. The auditory nerve has no commissure or decussation of fibres like the optic, and has a less central position in the cerebrum.

The proposition with reference to the organization of

A CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was discussed and a Committee of Conference was appointed, consisting of Drs. C. R. Agnew, New York; H. Knapp, New York; John Green, St. Louis; W. H. Carmalt, New Haven, and George Strawbridge, Philadelphia.

OFFICERS FOR THE ENSUING YEAR:

President, Dr. J. S. Prout, of Brooklyn; Vice-President, Dr. Samuel Sexton, of New York; Secretary and Treasurer, Dr. J. J. B. Vermyne, New Bedford, Mass.; Committee on Membership, Drs. Gorham Bacon, W. S. Little and E. W. Bartlett.

The following were elected to membership: Dr. J. B. Emerson, of New York; Dr. J. O. Tansley, of New York; Dr. J. L. Minor, of New York; Dr. Henry L. Morse, of Boston; Dr. Huntington Richards, of New York, and Dr. T. Y. Sutphen, of Newark, New Jersey.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twelfth Annual Meeting, Held in Quincy, Ill., July 13 and 14.

THE PRESIDENT, ARCH. DIXON, M.D., OF HENDERSON, KY., IN THE CHAIR.

In the absence of the Secretary, Dr. E. B. Montgomery, of Quincy, was made Secretary.

DR. H. M. LANE, of Carthage, Missouri, read a paper on

YELLOW FEVER IN BRAZIL,

giving some of his observations and experiences in the use of Freire's method. He asked that the Society memorialize Congress on the question of appointing a committee to investigate the method of Freire.

DR. LOUIS BAUER, of St. Louis, presented a patient on whom he had operated performing

LAPAROTOMY FOR SYMPTOMS OF ILEUS,

but had discovered an abscess in the liver from which he drew a quart of pus, afterwards washing out the abscess cavity with antiseptic fluids. A portion of the gall-bladder sloughed out, and the large intestine was perforated. The patient made a good recovery.

DR. F. W. BEARD, of Vincennes, Ind., related a case in which he had observed emission of semen in death by hanging.

In the evening DR. A. H. OHMAN-DUMESNIL, of St. Louis, read a paper on

AN UNUSUAL CASE OF LUPUS ERYTHEMATOSUS.

In his case, a farmer 52 years of age, the lupus involved the dorsum of the hand and arm, but occasioned no complaint on the part of the patient. He used a concentrated solution of lactic acid in the treatment of the case. He had several microscopes and illustrated the pathology of the disease.

THE PRESIDENT read a paper on

PERINEAL LACERATIONS,

giving an account of Simon's method of operating.

DR. I. N. LOVE, of St. Louis, read a paper on

ARTIFICIAL ALIMENTATION.

He regarded the skin, the rectum and the vagina as surfaces from which much nourishment might be absorbed and life prolonged. He drew the following conclusions:

1. In cases which demand artificial alimentation, when the conditions will permit, the vagina may be utilized to supplement feeding by the rectum.

2. In some instances diseases of the alimentary canal in its entirety preclude feeding by either the stomach or the rectum, in which cases the vagina may be utilized to practical advantage.

3. That whether the vagina or rectum be used for purposes of feeding, the materials should be as thoroughly digested previous to using as possible; the milk albumen or beef fibre completely peptonized and the starchy matters changed into dextrose or glucose.

4. In many instances the vagina may be utilized for purposes of general medication and stimulation, and the stomach saved for the important one of feeding.

5. In many cases vaginal feeding, stimulation and medication is beneficial; in many others it is a potent means for saving and prolonging life.

6. In both rectal and vaginal feeding the same gentle care is necessary, and one advantage possessed by the latter over the former, is that the vagina is much the more tolerant of intrusion, and can be utilized for an almost unlimited time without revolting.

MORNING SESSION—JULY 14.

A discussion of Dr. Love's paper was had, after which the President announced as a Nominating Committee Dr. Jos. Robbins, of Quincy, Dr. Dudley S. Reynolds, of Louisville, Dr. Frank R. Fry, of St. Louis, and Dr. F. W. Beard, of Vincennes, Ind.

DR. FRANK R. FRY, of St. Louis, presented a paper on some of the current opinions regarding

THE ETIOLOGY OF CHOREA.

He was opposed to the theory of the causal relation between rheumatism and chorea, and believed it to be a pure neurosis.

DR. DUDLEY S. REYNOLDS, of Louisville, offered the following resolution, which was seconded by Dr. Wm. Porter, of St. Louis:

Resolved, That the Mississippi Valley Medical Association adopts as part of its organic law, and binding upon all its members, the Code of Ethics of the American Medical Association. After a spirited discussion the resolution was adopted with only two dissenting voices.

The Committee on Nominations reported the following

OFFICERS FOR THE ENSUING YEAR.

President, Isaac N. Love, St. Louis, Mo.; *First Vice-President*, Joseph Robbins, Quincy, Ill.; *Second Vice-President*, Jacob L. Geiger, St. Joseph, Mo.; *Third Vice-President*, Thos. B. Harvey, Indianapolis, Ind.; *Secretary*, J. L. Gray, Chicago; *Treasurer*, A. H. Ohman-Dumesnil, St. Louis, Mo.; *Assistant Secretary*, Edw. Allcorn, Houstonville, Ky.; *Committee of Arrangements*, Dudley S. Reynolds, Louisville, Ky.; Louis McMurtry, Danville, Ky.; James H. Letcher, Henderson, Ky.; J. N. McCormick, Bowling Green, Ky.; L. B. Todd, Lexington, Ky.;

J. Q. A. Stewart, Frankfort, Ky.; J. M. Holloway, Louisville, Ky.; J. M. Mathews, Louisville, Ky.

The next annual meeting will be held at Crab Orchard Springs, Ky., on the second Tuesday in July, 1887.

The President-elect was escorted to the chair, and after a few remarks appointed the following committee to draft a Constitution and By-Laws: Robert Barclay, of St. Louis, Wm. Porter, of St. Louis, and Jos. Robbins, of Quincy.

Dr. Dudley S. Reynolds read a paper on *Optical Defects in the Eye and their Correction.* Papers were also read by Dr. Amos Sawyer, of Hillsboro, Ill., on *The Therapeutics of Bismuth and Asclepias Tuberosa* (see page 123, JOURNAL of July 31), by Dr. L. H. Cohen, of Quincy, on *Electro-Therapeutics*, and Dr. E. B. Montgomery on the *Therapeutics of Hot Water.*

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Preventive Inoculation against Zymotic Diseases—Experiments on Animals in England—Sulphur in Diphtheria—Hospital Accommodation.

At the recent meeting of the Sanitary Institute of Great Britain Dr. T. W. Hime, Medical Officer of Health for Bradford, read a paper on "Pasteur and Preventive Inoculation against Zymotic Diseases." In the course of his address the lecturer dwelt at length upon the discoveries made by Pasteur with regard to rabies. He fancied, he said, that the interest attaching to the disease was to a large extent due to the cruel uncertainty which attended it. If the danger of hydrophobia were reckoned by the number of deaths it would be a comparatively small matter, though in the last thirty-four years there had been 884 deaths in England, and the numbers were increasing. In the ten years ending 1860 there were 98 deaths, and in the next ten years 143, and in the ten years ending 1880, 477 deaths. Nothing, practically speaking, was known of the disease, or of the way in which it was propagated, until Pasteur's time. He undertook his investigations in 1879, and by the next year he had discovered that if one had wanted to produce the disease certainly and without doubt it was necessary to resort to inoculation with nervous tissue. By 1884 Pasteur had inoculated a large number of animals, and he had discovered that if an ape were inoculated with the material taken from the spinal column of an animal that died mad, and the virus was passed on to successive apes, the effects became milder and milder; on the other hand, in guinea pigs it became stronger, and made them perfectly savage. Rabbits also suffered with a greater degree of intensity as the series became longer. In July last the first human patient, a boy, was inoculated by Pasteur, after consultation as to whether the operation was justifiable. Since that 1474 persons had been inoculated, 49 for wolf bites, of whom seven had died, and 1425 for dog bites, of whom four had died. Eliminating the cases still possibly in danger, he found that there were 113 persons who had been treated after being bitten by animals proved, either by the death of other persons bitten by the same animals, or by experiments, to have been rabid. Of these only one had died. Then 936 persons had been treated for bites from animals proved by chemical observation to have been rabid. Amongst these there had been only three deaths. Another class of cases was that in which persons had been bitten by dogs which had escaped, and were not proved to have been mad. Amongst these there had been one death. Of the persons bitten by wolves the mortality was 14 per cent., whereas, so far as any statistics were available, it was, without Pasteur's treatment, something like 80 per cent. Wolves inflicted very severe wounds, and a large amount of virus was consequently absorbed. The efficacy of Pasteur's treatment for wounds inflicted on the hands or face, the most exposed parts of the body, was shown by the fact that the mortality was only 1.8 per cent, whereas it was known to have been 88 per cent. amongst persons bitten previously to his discoveries. The value of his system in protecting dogs had been proved beyond a doubt by the Commission appointed by the French Government. Out of twenty-three dogs presented by Pasteur after treatment for the experiments, the Commission had not succeeded in making a single one mad; whereas out of nineteen operated upon without previous treatment, fourteen had died mad. No scientific man of standing had made any objection to Pasteur's method, and he (Dr. Hime) hoped that the evidence he had laid before the Institute would be thought conclusive. He added that Pasteur had taken no patent, and had sought neither fortune nor honor at the hands of the French Government. His laboratories were open to all to go and investigate for themselves. In conclusion, he said it was a fortunate thing that M. Pasteur was not an Englishman, for if he had been it would have been impossible for him to embark in this country upon the work which he had so successfully prosecuted for the benefit of mankind. Dr. Hime himself is about to undergo treatment at the hands of M. Pasteur, having recently been severely wounded while conducting a post-mortem examination on the body of a dog that had died of hydrophobia.

The report from inspectors on experiments performed on living animals during the last year has just been published. The total number of experiments performed during the year was about 800. Of these 210 were done under the restrictions of the license alone, and eighty-two lecture demonstrations under similar restrictions. As regards the amount of pain involved in these experiments, in all of them, except those performed under special certificates, the animals are rendered insensible during the whole experiment, and are not permitted to recover consciousness. With regard to the experiments under special certificates, which dispense either partially or entirely with the use of anæsthetics, no less than 328 consisted, so far as any operative proceeding was concerned, in simple inoculation or hypodermic injection, either with some

morbific virus or for the purpose of therapeutic inquiry, and in which the administration of an anæsthetic, to which all animals have a great repugnance, would only entail needless annoyance and distress. Considered from the returns that have been received from various operators, and from other considerations drawn from their reports, it appears that the number of animals that suffered any appreciable pain might be estimated at thirty-five or forty, and these, for the most part, frogs. Although the number of experiments in 1885 was nearly double those performed in 1884, the increased number consisted of experiments not, or scarcely, involving any appreciable increase of suffering of the animals employed.

Arguing from analogy, and seeing the success of sulphur in vineyards for the cure of *oïdium*, Dr. Corbin has been trying it as the most rational treatment to adopt to destroy the fungus of diphtheria. Finely powdered sulphur blown down on to the membrane through a quill or glass tube causes no pain, and very little distress to even very young children, and in such cases it is the only local treatment which the Doctor finds himself able to adopt. Carbolic acid spray he has found useless as a germicide, because the mouth and throat will not tolerate it of sufficient strength to destroy the vitality of the false membrane, but in strength of 1 in 66 or 1 in 80 it is very soothing to the inflamed throat. Boracic acid spray, on the contrary, he finds extremely useful, for it appears to have the power of dissolving the membrane whose vitality the sulphur has destroyed, and thus a fresh surface is exposed for the next application of sulphur to act upon.

The following figures are interesting: In Glasgow there is hospital accommodation for one in 700 of the inhabitants; in Manchester one in 500; in Dublin one in 200; while in North London there is only one hospital bed for every 25,000 of the inhabitants.

DOMESTIC CORRESPONDENCE

THE ASSOCIATION OF AMERICAN PHYSICIANS.

To the Editor of the Journal:

Dear Sir:—Referring to the communications in your issues of the 24th and 3d ults, with regard to "The Association of American Physicians," it was with extreme reluctance, and only after recalling the fact that published matter of this kind becomes the source of history—history which in this instance would be erroneous—that I decided to write briefly the actual history of the formation of the society.

First, the organization was altogether independent of and prior to the idea of a Congress of American Physicians and Surgeons. The original suggestion came more than three years ago, *not* from Philadelphia or New York or Boston, but from Toronto, Canada. It was based upon the feeling that such a society had become almost necessary in view of the fact that all departments of medicine except general medicine and pathology were represented in special societies devoted to their interests. Further, it was long after the arrangements for organization were essentially completed, that the idea of a Congress of American Physicians and Surgeons was formulated by the American Surgical Association.

Second, the Association was not formed in antagonism to the American Medical Association, and it was a matter of serious solicitude with some of the founders lest such interpretation should be put upon its formation; but this was not considered sufficient reason for giving up a plan which promised so much for medicine and pathology. So far as I know, no member who is also a member of the American Medical Association has "forsworn his allegiance" to the latter, as is alleged by your Philadelphia correspondent.

Third, in selecting original members for the "active list," it was desired to secure men who had been and still are active in furthering the interests of medicine and pathology either as practitioners, teachers or writers. That this was accomplished with reasonable success, when it is remembered that a certain number of vacancies are maintained for the present, will, I think, be conceded by the unprejudiced observer.

Finally, with regard to the name chosen, a moment's consideration should satisfy the critic that the use of any other "article" than the "definite" would produce a ludicrous and impossible title. Such a title would be "*An* Association of American Physicians," "*An* American Gynecological Society," "*An* American Ophthalmological Society," etc.

I should have been glad to give your Philadelphia correspondent or any one else any information desired, had it been sought. Respectfully,

James Tyson,
Secretary of the meeting at Washington, 1886.

PROPOSED NEW MEDICAL ASSOCIATION.

To the Editor of the Journal:

Dear Sir:—While not one of the Original Committee of Seven, I nevertheless thought I was in close affiliation with them; but alack-a-day! I find that I am farther off than a poor relation. Where I am now I can hardly tell. I am not in holy fellowship with the American Medical Association, nor have I been included in the one hundred eminent martyrs; alas! not only not included, but not even invited to include myself. My pride has had a great fall, but by my conscience I don't deserve it, for I fought and bled as much as any of the limited one hundred, and more than a great many.

You may say that I am not eminent. Well, I will acknowledge that I once thought so myself, but the *Medical Record* has maintained that all who asserted their independence, manhood, etc., and who acted in sympathy with the nonconformists, became *instanter* eminent. I fulfilled all these conditions; ergo, I *am* eminent.

I was formerly under the impression that only new-coders were eminent practitioners, until the Editor of the *Medical Record* (who is authority on such subjects) enlarged the definition so that even old-coders might become eminent. As I have said,

I have complied with the requisite stipulations for old-coders to attain the modern but select degree, and yet I am left out in the cold. I suppose there must be a still higher degree, to which I have not yet attained, which places me among the great majority of the discarded.

However, I will not be so slighted, but propose to organize "The Association of Eminent American Physicians of the Second Degree"—limited; place of meeting Washington, D. C. You need not think we are not going to have our little whack at the Ninth International Medical Congress—so beware!

"IMPRIMATUR."

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

FAVUS OF FOWLS AND MAN.—At a recent meeting of the Paris Biological Society, M. NEUMANN stated that the favus of fowls is identical with the favus of human beings. He inoculated a young dog with fowl favus and another with the favus of the human subject; the affections of the two animals presented the same clinical features. Both were quickly cured without treatment as generally happens in this affection with animals. The same experiment was repeated on two rabbits with the same results. These researches of M. Neumann are fresh facts added to those already accumulated, showing the necessity for sanitary inspection of farmyards.—*Sanitary Record*, July, 15, 1886.

THE OUTLOOK FOR THE CONGRESS.—PROF. W. F. PECK, of the Iowa State Medical University, who is now making an extended tour of Europe, writes as follows from Amsterdam:

"I visited Prof. Esmarch the other day in Kiel. He will come to the International Medical Congress. From what I can learn the profession of Europe will send a large delegation. Prof. Billroth told me that he expected to attend, and Carl Braun will accompany him."

DISINFECTION OF RAILWAY CATTLE-TRUCKS.—Dr. Redard, Surgeon-in-Chief to the French Railways has lately presented a detailed report on the disinfection of cattle-trucks to the Government department charged with the railway administration throughout France. After reviewing the cleansing methods adopted in different countries, and recording experiments with chemical antiseptics and disinfectants, Dr. Redard arrives at the following conclusions: Chemical disinfectants are bad microbicides, requiring large quantities and prolonged contact. Spores and germ-corpuscles resist almost all chemical disinfectants. Some substances, which are very active against spores and bacteria, are very frequently powerless against a virus, unless incorporated with it freely and long. Heat is the disinfectant *par excellence*. Numerous experiments with virus and successive inoculations proved that absolute disinfection can only be obtained with certainty with steam superheated to + 110° C. This is not easy to obtain. The different processes hitherto in use only yield boiling water or steam below 100° C. Dr. Redard therefore proposes to pass the steam through a serpentine coil placed in the locomotive boiler. Steam from 110° to 130° C. may thus be obtained.—*Lancet*, July 10, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 24, 1886, TO JULY 30, 1886.

Col. Joseph B. B. Brown, Surgeon, retired from active service, July 26, 1886. (S. O. 171, A. G. O., July 26, 1886.)

Major J. R. Gibson, Surgeon, ordered from Dept. East to Dept. Mo. on expiration of leave of absence granted in S. O. 158, c. s., A. G. O. (S. O. 168, A. G. O., July 22, 1886.)

Major Edwin Bentley, Surgeon, ordered for duty as Post Surgeon, Ft. Davis, Tex. (S. O. 92, Dept. Texas, July 22, 1886.)

Major M. K. Taylor, Surgeon, granted leave of absence for one month, with permission to apply for one month's extension. (S. O. 77, Dept. Mo., July 24, 1886.)

Major Passmore Middleton, Surgeon, ordered to Dept. East from Dept. Mo. (S. O. 168, A. G. O., July 22, 1886.)

Capt. Joseph B. Girard, Asst. Surgeon, granted leave of absence for three months, with permission to go beyond sea. (S. O. 170, A. G. O., July 24, 1886.)

Capt. Samuel Q. Robinson, Asst. Surgeon, ordered for duty as Post Surgeon, Ft. Brown, Texas. (S. O. 92, Dept. Tex., July 22, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JULY 31, 1886.

Lumsden, J. A., P. A. Surgeon, to duty at Marine Barracks, Washington, for month of August.

Cordeiro, F. J. B., Asst. Surgeon, ordered to receiving ship "Minnesota"

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED JULY 31, 1886.

Long, W. H., Surgeon, granted leave of absence for fifteen days. July 30, 1886.

Sawtelle, H. W., Surgeon, to proceed to Portland, Oregon, and Port Townsend, W. T., as inspector. July 29, 1886.

Devan, S. C., P. A. Surgeon, granted leave of absence for ten days. July 26, 1886.

Fattic, J. B., Asst. Surgeon, granted leave of absence for twenty-nine days. July 26, 1886.

Carmichael, D. A., P. A. Surgeon, granted leave of absence for thirty days. July 24, 1886.

Magruder, P. M., Asst. Surgeon, to proceed to Cairo, Ill., for temporary duty. July 22, 1886.

UNITED STATES ARMY
MEDICAL DEPARTMENT

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, AUGUST 14, 1886. No. 7.

ORIGINAL ARTICLES.

THE PROGRESS OF PNEUMATIC DIFFERENTIATION.[1]

BY HERBERT F. WILLIAMS, M.D.,
OF NEW YORK.

In the *Medical Record* of January 17, 1885, is found the first report of the application of the Pneumatic Cabinet to diseased conditions of the lungs. This process was called Pneumatic Differentiation and the description was entirely confined to what in the perfected instrument shown to day is the first act, *i. e.*, producing rarefaction in the cabinet about the patient and compelling him to respire the normal atmosphere. That report contains the history of sixty-two cases treated in this manner, seven of which were given in detail, and five there classed as recovered further appear in my second paper delivered before the American Climatological Association, and published in the *New York Medical Journal*, October 3, 1885. Further reference to these cases will be made in a clinical report which I shall have the honor to present to the same Association during the present month. It will show these cases remaining in good health up to January of this year, a space of nearly two years in each case, and without further treatment.

Dr. Houghton, of Chicago, published a report entitled "Pneumatic Therapeutics" in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, November 7, 1885. He advanced some new and ingenious theories suggested by the cabinet in relation to the causes of peri- and inter-vesicular deposit, and reports thirty-four cases of various pulmonary affections, twenty-five of which were classed as phthisis in different stages, four of which in the acute stage recovered and ten improved; three did not improve. Dr. Jensen, the same JOURNAL and date, confirms one of these cases as acute catarrhal phthisis recovered.

Dr. E. Tiegel, of New York, in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, in the issue of November, 28, 1885, discussed "The Physiological Action of the Differential Pneumatic Process on the Circulation." His investigations being made before the present form of cabinet was perfected, he necessarily confined his experiments and arguments to the simple act of immersing the patient in rarefied air while breathing the normal air.

The first full description of the cabinet as perfected was given before the Section on Practice of the New York Academy of Medicine, December 15, 1885, by its inventor, Mr. Joseph Ketchum, in a paper entitled "The Physics of Pneumatic Differentiation" published in the *Medical Record*, January 9, 1886. This was accompanied by a paper from Dr. E. Darwin Hudson, Jr., in the same issue entitled "Present Status of the Pneumatic Treatment of Respiratory Diseases," in which he refers to the preceding work in this field, and shows the value and individuality of the cabinet.

In the *Boston Medical and Surgical Journal*, of July 16, 1885, appears an article from Dr. V. Y. Bowdich, of Boston, entitled "The Treatment of Pulmonary Diseases by means of Pneumatic Differentiation."

Dr. F. Donaldson, Jr., of Baltimore, in the *Maryland Medical Journal*, of February 13, 1886, publishes an article entitled "The Pneumatic Cabinet and Pneumatic Differentiation," in which in a postscript he speaks of the cabinet as giving excellent results, and briefly reports two cases. Among other professional publications on the subject, are those of Dr. W. Everett Smith in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, November 14, 1885, and the *Medical and Surgical Reporter*, of Boston, February 20, 1886, and Dr. Houghton in *St. Louis Weekly Medical Review*, January 2, 1886. Dr. Sidney A. Fox, of Brooklyn, read a paper before the Kings County Medical Society, February 16, 1886, in which he reported sixty-eight cases of pulmonary diseases treated by pneumatic differentiation. Many other papers have been read before County and State Societies, and are now awaiting publication in the official journals.

In consultation and correspondence with a large number of physicians, I have found that nearly all have been looking for a method whereby we might topically medicate the lungs. In this process that result has been accomplished. Mr. Ketchum has shown that we can not only carry a medicinal agent into the remotest alveolus, but condense it there.[1] It now remains for patient, accurate and careful inquiry to decide whether such medication is efficacious and expedient. Have we not here a field of immense breadth, and will it be fair to adopt the pessimistic argument that nature seeks by the expanse of turbinated bone, and the protected glottis to warm and purify the air before it meets the delicate membrane where its physiological purpose is subserved.

To offset the argument that to change the humidity or temperature of the air, or to burden it with foreign

[1] Read in the Section on Practical Medicine at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] Med. Rec. Jan. 9, 1886. Page 31.

matter would seem illogical and impracticable, we have, first, the result of clinical evidence; second, analogy. Our practical experience teaches us that the pulmonary mucous membrane and deeper tissues tolerate invasion without serious disturbance. We know how readily water is absorbed by the lungs in conditions of partial drowning. Effused blood with its various inflammatory products, may not itself occasion disturbance by its physical presence in the deeper pulmonary tissues excepting so far as it excludes air. Nothing that prudence could suggest as a remedial agent could be any more irritating than the decomposed and ichorous discharges that sometimes bathe the inter-pulmonary surfaces. Analogy shows that surgeons have for years been disregarding the physiological function of a part when disease demands interference. The serous membranes and cavities have been invaded and washed with the most irritating agents. Every mucous tract of the body has demonstrated its tolerance of violence. But it may be asked what is the effect where an agent applicable to a diseased pulmonary area is inevitably introduced into areas remaining in health? There is nothing in this question that exclusively applies to this process. Would not many of our surgical operations give doubtful evidence of our mechanical skill if kind nature did not endure, forgive and repair? When the head throbs with fever that is threatening life, do we hesitate to give an agent of the power of quinine in antipyretic doses? For a remote ache or pain is it not sometimes necessary to narcotize the entire nervous system?

Since the days of Sir James Y. Simpson, McDowell and Morton, have we not chilled the inter-pulmonary tissues with chloroform and ether, and though as I believe by so doing we invite congestion, does it deter us when the greater necessity arises?

Again, is there anything ethereal about the pulmonary tissues that prohibits an effort to cleanse and disinfect? Indeed, in some cases it seems as though the process of repair in pulmonary tissue is as rapid as in the scalp or tongue, and perhaps for the same reason. There is a great diversity, or I may better say, confusion in the professional mind as to whether Koch's bacillus is the cause or concomitant of tubercular disease. Certain it is that a few well-known agents are capable of destroying these organisms. It is moreover certain that in every case of phthisis in which they are found serious, progress has been made or violent symptoms continually threaten.

There must have been a time in the history of a given case, when lung tissue rendered congenial for the lodgment of its bacterian enemy received its first impregnation. Could we ascertain this period. Can we imagine any surer method of extermination than to introduce at the seat of lodgment a well-chosen germicide. Would we care then if the adjacent tissues were sterilized? Indeed, I think I have already demonstrated,[1] that by the differential pneumatic process it is possible to save healthy lung tissue from tubercular infiltration.

It is then desirable to have in our power a means by which we can medicate the lungs, and with the conviction in my mind that amounts to a certainty, I neither shrink from the possibilities of therapeutic error nor grow discouraged, because in a given case the relation between the extent of disease and a well directed remedy is insurmountable. I have certainly more than once secured results which could only be fully explained consistently with the hypothesis that a thorough and prolonged course of antisepsis had by coincidence, rather than calculation, been instituted at the time when tubercular germ life though present, had not established an impregnable foothold. When from the contemplation of this hypothesis I turn to the constant progress of scientific inquiry, and especially the recent developments on biological analysis, I desire to record the prediction that at no distant day a system will be developed and adopted, whereby we can certainly sterilize a pulmonary area, and gain the mastery of tubercular disease to a degree hitherto thought chimerical. However remote the hope thus expressed, it surely affords encouragement to those advanced investigators who systematically employ the microscope as an aid to diagnosis. This method will also detect the early manifestations of grave diseases and will fortify our diagnosis against heretofore unanswerable accusations of unawarrantable conclusions.

The pneumatic cabinet as a mechanical device, independent of its ability to convey a remedial agent to diseased pulmonary structure, and condense it there, is itself a factor of no small moment as a salutary measure. Its capacity to increase expansion, to thoroughly ærate the blood, and to thereby promote assimilation and functional activity is attested by the uniform experience of those who have observed its effect.

In patients where the correction of faulty frame developments or distortion is retarding health, this may alone confer all the benefit required. In certain conditions of instituted disease, such correction may render cure or improvement possible to the exclusion of remedial influences.

These results, certainly the most obvious, appeal to some investigators as the most important of its accomplishments.

If in the selection of appropriate agents, whether emollient, sedative, germicidal or stimulating, there is a field for discrimination, equal opportunity is offered for choosing, first, the character of force, and secondly, the degree. The annals of medicine are replete with the history of cases treated by means of air chambers, where air at different degrees of density and humidity exerts a therapeutic influence. Drs. Bowditch and Hudson have well shown the essential distinction between this and all other devices for treating pulmonary disease.[1] Waldenberg's gasometer seems to some to produce essentially the same mechanical effect.

In pointing out the fallacy of such a conclusion I do not mean to imply the inutility of inhaling condensed air or of expiring into rarefied air. For these purposes the Waldenberg condenser is complete and

[1] N. Y. Medical Journal, October 3, 1885.

[1] Boston Med. and Surg. Jour., July 16, 1886. Medical Record, Jan. 9, 1886.

sufficient, for in order to duplicate this by the pneumatic differentiator, it would be necessary to have the patient to stand or sit outside the cabinet and breathe into it either at pressure or vacuum. The processes then would be nearly identical.

But as to the operation of the pneumatic cabinet, what are the facts? In the first act, that of immersing the patient in rarefied air, say at two inches fall of the manometer, we remove one-fifteenth of the atmospheric pressure, which is taking away one pound pressure per square inch of the superficial area of the lungs. If, as frequently happens in the progress of phthisis, communicating and healthy bronchi have become occluded by sputum, the imprisoned air must expand, and a corresponding force be brought to bear behind the occluded point. This I have demonstrated before you to-day.

The rarefaction then is allowed to run down to one inch of the manometer or to a safe and prudent degree. Now begins the act of inspiring the normal atmosphere, while immersed in vacuum, which to some seems equivalent to inspiring the condensed air of Waldenberg, but there is not a similarity excepting that of the force of the weight of the normal atmosphere. The patient's thorax relieved of a part of its burden, the inter-pulmonary molecules of air separated from each other are inviting their fellows from outside, and are ready to assume normal relations when they meet. In other words an aspirating force is created, that compels a circulation of air with its normal quota of oxygen which no prudent amount of direct force could produce in the alveolus. This may be amplified as follows: In the cabinet the atmospheric support of the chest walls being withdrawn, each ultimate cell is expanded, and there the initial energy is developed. This expansion is communicated along the respiratory avenues to the respiring air. Thus each molecule separated from its neighbor by the increased space of its habitation permits the tidal air at normal density to penetrate into the enlarged cell.

While in the compressed air method the inititial energy is developed in the apparatus and the tidal air is forced down and super-imposed on the cushion of residual air. The inefficiency of compressed air to carry moisture marks a further and important difference.

Second:—Compressing the air about a patient in the cabinet, and allowing him to expire into the normal atmosphere. Here again carelessness may not detect the difference between this and expiring into rarefied air. At a pressure of two inches of the manometer we are exerting a collapsing force about the lungs of one pound per square inch. The patient now makes an expiratory effort into normal air. Should it be thought desirable the pressure can be carried to such a degree that volition cannot prevent the imprisoned air from rushing out through the alveoli, bronchi and trachea, and unlike the act which it is thought to simulate the initial movement is in the alveolus, for its air is driven and not sucked out,

The third act, *viz.*, that of alternating compression and rarefication is unique, comprehensive and unapproached by any previous device. Mere respiration can be maintained if necessary independently of volition. Moderately applied, it affords a respiratory assistance, which many diseased conditions welcome. It further promotes the condensation of vapor, by increasing the relative difference of atmospheric pressure at inspiration and expiration.

This description must suggest to your minds many conditions in which if properly applied the process will be of no uncertain value. Time will not permit me to here record the results attained since my last clinical report. The results of independent investigators in different sections of the country, all substantiate the claims originally published. These physicians are located in many of the larger cities, and several are in sections of the country where climatic influence may demonstrate the cause of failure in certain conditions where climatic advantage has been denied. The reports of recovery and improvement are largely in excess of negative results and failures.

As an office instrument at present applied the cabinet fully answers the purposes for early conditions or for the occasional relief which irrecoverable cases can obtain. For methods of diagnosis one application will frequently so change the physical character of the chest sounds that that which before treatment was obscure and indefinite can readily be appreciated and classified. Every one must see that in occasional cases the cabinet as at present applied is at an immense disadvantage. This suggests the necessity for the establishment of properly constructed sanitaria where inclement weather cannot interrupt the treatment nor prevent its frequent and, if necessary, prolonged application. In many a case ultimate phthisis primarily induced by delayed resolution of acute disease, be it pneumonia, pleurisy, the essential fevers or the various forms of septicaemia, would have been cheated of its victim if it had been possible to apply this process in the sufferer's sick chamber.

How many times are we called to watch the battle between disease and repair with our hands tied until the moment when Nature's pure air can be made to freely circulate throughout the lungs for the double purpose of preserving their integrity and ventilating the sluggish blood which has so long been poisoning the nervous centers! The utility of the instrument will be greatly augmented when we can have it placed in the sick chamber of such a case. Several prominent practitioners who cannot afford the time to properly administer this treatment have adopted the practical plan of sending their patients to some younger physician in whom they have confidence and with whom they have made agreeable conditions.

The older practitioner having the larger opportunity for detecting the earliest manifestations of disease thus insures his patient prompt institution of an efficient and radical treatment at a stage when recovery may be anticipated.

I have been specially devoted to the study and analysis of the pneumatic process for the last three years. My experience, now matured, convinces me not only of its far reaching power within the thera-

peutic regions so far developed, but of its promise in fields as yet only suggested. Its use has provoked in many minds rational theories which, as I believe, will employ a generation.

The great mechanical power of the apparatus is apparent to any observer. In ignorant or careless hands it is capable of deadly force. The corollary of power is peril. But perhaps the greater danger is that it may fall into the hands of routinists, who disregarding the necessity of accurate diagnosis may apply it where its use is contraindicated and for the resultant failure condemn it generally.

When it has produced in a given case what may be called the maximum of improvement, whether this is reached by one or one hundred applications, its use should be suspended. An elastic conscience might distort sound judgment so long as the hopeful sufferer proved a source of revenue.

It needs no reflection or argument to suggest the grievous misfortune to humanity if the men who already prey upon the credulous consumptive with no weapons save natural depravity and cunning shall find in the cabinet a device by which they can impress the imagination and perhaps chance upon an exceptional result. Its potentialities of good and evil alike dedicate this instrument to the profession. It should be our desire and, if opportunity offers, our duty to secure it against the temerity of charlatans or abuse by the avaricious practitioner.

It was with a thorough appreciation of these considerations that the inventor sought the counsel of the late Professor Samuel G. Armor who had watched with much enthusiasm the progress of his early experiments. In accordance with his advice, which was later on thoroughly endorsed by Prof. Henry I. Bowditch, of Boston, and other leaders in the profession, an advisory Board of Physicians has been invested with the absolute power of rejecting or accepting any application for the use of these cabinets. This plan has so far restricted the process to absolutely appropriate and trustworthy hands. For the last year of his life, Prof. Armor was chairman of this Board and since his decease Prof. Alfred L. Loomis, of New York, has occupied that position. It is designed to add to this Board a representative physician from each of the prominent medical centers of the country whose more accurate knowledge of the physicians residing in his own community will enable him with greater certainty to accept responsibility for them when entrusted with the apparatus.

This cabinet has already increased the sphere of professional activity and benefit, while it beckons us to further accomplishments. Surrounded by safeguards which preserve it as a strictly professional instrument, it deserves from us to whom it has been thus entrusted, not only faithful test but unprejudiced recognition of its capacities when established by sound reason and clinical evidence.

At my request reports have been sent me by many of those physicians who are using the cabinet, with expressions of opinion and clinical reports. Having occupied already so much of your time I shall only refer to them generally. Others are preparing reports for their State and county society meetings, and a mass of clinical evidence is being collected which cannot fail to direct attention to this department of pneumotherapy.

Dr. C. B. Herrick, of Troy, N. Y., reports three cases, one of improvement with a gain of twelve pounds, another with a gain of five pounds, and the third a marked improvement from unresolved pneumonia. Dr. W. A. De Watteville, of New York, reports three cases with his conclusions; two of them, both 3d stage cases, became quiescent, the third was a failure.

Drs. Classon and Clarke, of Albany, New York, send full details of one case in which they confidently expect recovery from acute phthisis, with reference to several others in which the process is giving relief.

Dr. R. H. Babcock, of Chicago, reports two cases in which improvement is noticed and says, "It is in my opinion a valuable adjunct." "Its influence over cough and expectoration is of such marked benefit as to alone recommend the method," and speaking of the stimulated circulation says, "were this alone and nothing more the result of treatment with the pneumatic cabinet, this were enough to recommend it to the profession."

Dr. W. Everett Smith, of Boston, reports a case of incipient consolidation at apices in which he does not hesitate to claim a recovery.

Drs. Cutts and Fernald, of Washington, report a case of marked improvement after thirty sittings with a gain of eight pounds in weight and absence of signs of the previous pulmonary lesion.

Dr. E. E. Trudeau, of the Cottage Sanitarium at Saranac Lake, New York, says: So far as he has gone he can bear testimony to the usefulness of the method in those cases where good might be expected from expansion and improved pulmonary nutrition, but in cases where localized antiseptic treatment is indicated it is less satisfactory. He finds its most brilliant field in cases when contraction of connective tissue as in chronic phthisis exists, with mal-nutrition, debility and dyspnœa, also in apical lesion with coincident constitutional disturbance. He also says: "Most patients suffering from incipient or chronic phthisis have shown more or less marked improvement, one case gaining seventeen pounds in weight with an entire disappearance of all moist sounds in the lungs."

Dr. J. H. Blanks, of Meridian, Miss., has sent me a classification of twenty-seven cases, twelve of which were bronchitis, and in which nine recovered, two improved and one did not improve. Two were unresolved pneumonia, with one recovery and one improvement, and thirteen were of phthisis with one recovery, five improvements, four non-improvements and four deaths. The latter were so far advanced that they were unable to walk without assistance, and one received only four treatments. He also sends full details of two cases, one of practical recovery and one of marked improvement.

252 Madison Av., N. Y.

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL TUMORS.[1]

BY D. A. K. STEELE, M.D.,

PROFESSOR OF ORTHOPÆDIC SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO; SURGEON TO COOK COUNTY HOSPITAL, ETC.

The differential diagnosis of scrotal tumors is not always an easy matter. The peculiar anatomical conformation of the parts, the varied morbid alterations of structures normally located, and the frequent intrusion within the scrotal pouch of dislocated or adventitious tissue renders a positive diagnosis difficult, if not indeed impossible in certain cases. It has been our fortune to witness a number of grave errors of judgment as to the nature of tumors within the scrotum, and our misfortune to occasionally participate in these mistakes. When we consider that a scrotal tumor may be a hernia, hydrocele, orchitis, epididymitis, varicocele, cancer, sarcoma, hæmatocele, or a complication of two or more of these affections, the reason for an occasional blunder is more apparent—and an allusion to previous mistakes may be a reminder of certain diagnostic points that will serve to warn the members of this Society from pitfalls where others have stumbled.

"A tumor is a morbid swelling, prominence or growth on any part of the body." Surround this definition with the scrotal walls and you embrace our subject. The scrotum is a pouch formed of the common integuments for the reception of the testicles. It is evenly divided externally into two halves by a prominent ridge, a continuation of the raphé from the under part of the penis to the perineum. The skin of the scrotum is thin like that of the eyelids, and darker in color than most other parts. It is very loose and extensible, as evidenced in connection with scrotal hernia or very large hydroceles.

The *dartos* is a thin layer of contractile tissue of a reddish-grey color immediately beneath the skin, and intimately connected with its inner surface. Bowman considers the dartos to be muscular and composed of "unstriped elementary fibres." Scrotal movements by the dartos are involuntary and peristaltic or vermicular in character. Contraction is excited by cold, fright or venereal orgasm; relaxation by heat, old age, debility. Galvanism produces no effect. Beneath the dartos there is a quantity of loose cellular tissue. Underlying this we find the superficial spermatic fascia continuous with that covering the lower part of the abdominal walls, and descending to form a sheath for the spermatic cord and enveloping the testis.

Beneath this is the cremaster muscle, which is interesting from a diagnostic point of view on account of its action in elevating the testicles to the abdominal rings, and the fact that sometimes this power of retraction is entirely volitional and might be used by a malingerer to simulate an inguinal hernia. Pre supposing a thorough knowledge of the anatomy of the testis on the part of my auditors, a detailed description is not needed; it will only be necessary for us to remember the relation of the parts composing these glands. First, the tunica vaginalis, a delicate serous membrane in the form of a shut sac, enveloping by means of its outer layer all of the testis except its posterior edge and lower extremity, is derived from the peritoneum. The line of attachment is about five lines from the inferior extremity of the testis. Second, the tunica albuginea, a dense fibrous layer forming the covering proper of the gland, but not including the epididymis. Third, the gland structure proper, consisting of the seminiferous tubes, blood-vessels, lymphatics and nerves. Fourth, The epididymis is a continuation of the gland proper, containing the excretory ducts which empty into the vas deferens, which is the real excretory duct of the testicle.

At an early period of fœtal life the testes lie behind the peritoneum in the region of the kidneys, being loosely attached to the peritoneum by the mesorchium. The inguinal canal has already been formed, and is occupied by a cord-like structure, the *gubernaculum testis*, which extends from the bottom of the scrotum to the testis, to the under surface of which it is attached, and as the testicle gradually descends during the last months of fœtal life the gubernaculum testis shortens and guides the way. At the same time the peritoneum enters the inguinal canal in advance of the testicle, descending in a loose fold as the gubernaculum contracts and draws the testicle down after it. The descent of the testicle is usually completed shortly before the birth of the fœtus; and, as a rule, the neck of the peritoneal sac is obliterated by occlusion before the child is born, thus cutting off all communication between the tunica vaginalis and the peritoneal cavity. This occlusion may be incomplete, thus giving rise to congenital hydrocele, or it may occur at two or three different points, leaving free serous spaces intervening, occasioning encysted hydrocele—or hydrocele of the cord. So much, then, for an outline of the anatomical points of our subject.

For diagnostic or clinical purposes tumors of the scrotum may be divided into two general classes, viz.: reducible and irreducible—reducible tumors including all herniæ (except strangulated), varicocele, and congenital hydroceles. Irreducible tumors of the scrotum would include all tumors connected with the testicle, all hydroceles (except congenital), and strangulated hernia. Tumors of the tegumentary surface of the scrotum, such as inflammatory œdema, elephantiasis and epithelioma, are usually so characteristic in their history as to offer no special impediments to a correct diagnosis.

Scrotal hernia may be mistaken for:

1. Hydrocele of tunica vaginalis, cord, or encysted hydrocele.
2. Sarcocele of the testicle, simple, tuberculous, cystic or malignant.
3. Varicocele.
4. Hæmatocele.
5. Bubo.
6. Undescended testis.

In scrotal hernia, as a rule, the tumor is soft and doughy to the touch, light weight, smooth and regular, painless unless inflamed or strangulated, of sudden advent from above downwards, resonant on percussion, fills the inguinal canal, has cough impulse,

[1] Read before the Chicago Medical Society, July 19, 1886.

gurgles, is of normal color, opaque, may exist on either side, the spermatic cord is concealed, does not fluctuate, aspiration is negative, bowels may be embarrassed. It can be reduced unless the hernia is strangulated or incarcerated.

1. (a) In hydrocele of the testicle the tumor is ovoid or pyriform, develops slowly from below upwards, is firm, tense and elastic, fluctuates, is translucent, dull on percussion; is irreducible; spermatic cord is neither concealed or displaced; the inguinal canal is empty; bowels unaffected; aspiration reveals fluid.

(b) In hydrocele of the cord the difference is that the tumor is circumscribed, encysted, and sometimes reducible, situated usually near the epididymis, but returns after reduction irrespective of position.

(c) In congenital hydrocele the fluid disappears completely within the peritoneal cavity by compression of the tumor for a short time.

2. (a) In sarcocele of the testicle the tumor is usually hard and resistant, heavy, often nodular and irregular; painful; grows slowly; dull or flat on percussion. The inguinal canal is empty; no impulse on coughing; bowels unaffected; irreducible; no auscultatory sounds. Simple sarcocele is chronic orchitis. Both the epididymis and body of the gland are affected. The cord is usually thickened. Abscess of the organ may occur. It is caused usually by an injury followed by inflammatory deposits.

(b) Tubercular sarcocele is met with most frequently in early manhood, and may occur in any constitution; in the strong and robust as well as the weak and cachectic; and although often associated with tuberculerization of other organs, it is common enough to find the tuberculous nidus in the epididymis, not as a sequence of gonorrhœal inflammation or some slight injury followed by inflammatory infiltration—as was formerly believed—but as a coincident.[1] The progress is slow and insidious. The gland at first moderately enlarges with little or no pain, the hypertrophy being especially marked in the globus major. Presently the outline of the tumor becomes craggy or nodulated, and circles around the testicle from behind forwards in the form of a crescent. After several months, this adventitious tissue exceeds in size the testicle proper, and then it begins to soften at points and one or more abscesses burst and discharge a thin shreddy pus. The vas deferens is greatly enlarged.

(c) In syphilitic sarcocele or gummata the history of the patient guides us in the diagnosis. Also, we find that the body of the gland is usually the seat of the infiltration which takes place in the connective tissue between the tubuli seminiferi, the epididymis undergoing little if any enlargement. The cord and vas deferens are unaffected. There is little or no tenderness, and the peculiar sensation elicited by squeezing a healthy testicle is absent. The tunica albuginea is very greatly thickened. Hydrocele is a frequent complication and tapping is often required to establish a diagnosis.

Cystic tumors of the testis closely resemble hydrocele, and differ chiefly in being opaque instead of translucent. Aspiration should be practiced before pronouncing positively upon their character.

Cancer of the testicle primarily invades the body of the gland, and almost invariably assumes the encephaloid form. Most observers doubt the existence of other varieties of malignant disease in this organ. The development of the disease is rapid. The patient has a sensation of weight, pain and dragging in the testis, the scrotum becomes distended, reddish or purplish, and the superficial veins are seen to be enlarged. The skin adheres to the gland, ulceration occurs, fungus protrudes, the inguinal glands are secondarily involved, and the patient by this time presents the characteristic cancerous cachexy.

3. In varicocele the tumor is knotty and irregular like a bag of worms, bluish in color; most frequent upon the left side; increases in size upon the application of heat; develops gradually; is dull on percussion; fluctuation doubtful; spermatic cord not affected; inguinal canal not involved. No cough impulse. It reduces spontaneously by any position that favors increased venous return, but returns immediately when the patient stands up notwithstanding pressure at the ring. There is weight and dragging in the scrotum.

4. In hæmatocele the advent is sudden; usually traumatic in origin; grows from below up if spontaneous; fluctuates until coagulation occurs; is at first soft, and hard after coagula form. It is pyriform in shape; ecchymotic; irreducible; heavy; dull on percussion. The spermatic cord is unaffected, and the inguinal canal empty. There is often pallor and prostration from loss of blood. The bowels are unaffected.

5. Bubo is seldom mistaken for a scrotal tumor, and it is unnecessary to name differential points.

6. An *undescended testicle* is painful, and pressure upon it yields a peculiar sickening sensation. It is found wanting upon the side occupied by the tumor, and the scrotum is imperfectly developed upon the same side. It is sometimes mistaken for a bubonocele.

In order that it may not be thought that the somewhat minute enumeration of diagnostic points mentioned in connection with these various scrotal tumors is tedious or unnecessary, I beg to present the following cases which have fallen under my observation during the past few years. In all of them a more or less serious error of judgment occurred.

Case 1.—S. J. J., æt. 30. On Sept. 16, 1883, Mr. J. called upon me, stating that he was suffering from a hydrocele and wished a permanent cure; that he had consulted Dr. Roswell Park, who advised tapping it, but that as Dr. Park was about leaving the city, his family physician, Dr. Doering, advised him to place himself under my care for a radical cure. Mr. J. stated that when he was a boy while in swimming one day his attention was directed to the fact that the right side of the scrotum was larger and heavier than the left, but that he had never paid any attention to it until about a year previous to the time he

[1] The bacilli tuberculosis which were formerly probably disporting in the blood in a state of innocuous desuetude, now finding a fertile soil in the increased vascularization of the part, proceed to inhabit, multiply and take possession of the part to its ultimate destruction—just as other microbes have an affinity for the epiphysis of long bones where the blood current is sluggish.

called upon me, since which time he had noticed a gradual enlargement that caused no pain or discomfort except a sense of weight and a tired feeling in that side; but as it was steadily and slowly increasing in size he decided to have it removed. It was soft and fluctuant to the touch, pyriform in shape, slightly translucent; inguinal canal full and prominent, and from the history and physical appearance I concluded that it was a hydrocele complicated with a tumor connected with the testicle, and, having some doubt as to the exact nature of the growth, I took him to Dr. E. Andrews, who concurred in the opinion of a hydrocele and thought the tumor was possibly a sarcoma or cystic testicle, and advised emptying the tunica vaginalis and then examining the tumor more satisfactorily.

On Sept. 22 I aspirated the tunic in the presence and with the assistance of Dr. Roler, obtaining about two ounces of clear serum instead of a pint or more that I expected. I injected sac with 5 per cent solution of carbolic acid, and kept him in bed for a few days. I then concluded that the testicle was cystic and advised its removal, which was readily agreed to.

On Oct. 5, in the presence of Drs. Andrews, Doering, Beery, Stowell, and two or three students, I operated by making a long free incision down through the successive layers upon the tunica vaginalis, which I then loosened and raised up to examine more carefully. It was soft, fluctuant and opaque. I made a free incision into it, and instead of fluid out gushed a mass of omentum that had distended it, closely surrounding and masking the testicle. A small quantity of serum was present, an ounce or two perhaps. All doubt now disappeared and we had to deal with a case of incarcerated congenital omental hernia of the tunica vaginalis—the testicle was perfectly normal. The omental mass was tied in sections with catgut and cut off short, being left as a plug in the inguinal canal. All bleeding points were ligated with catgut. The testicle was returned within the tunic, a drainage-tube inserted, and the wound washed out with a carbolized solution and antiseptic dressing applied.

Mr. J. made a steady and uninterrupted recovery, resuming work in less than two months. The only complication was a circumscribed cellulitis extending along the cord, that appeared about two weeks after the operation, and was treated by hot poultices and blisters for some ten days, when the induration disappeared. I have seen the same complication in three other cases of operations upon the testicle, and believe it is a common occurrence. In this case the error was made of not attaching sufficient importance to the filling up of the inguinal canal.

Case 2.—S., æt. 29, a healthy young man, applied to me in August, 1881, for relief from a subacute epididymitis that came on a few weeks before as the result of a slight injury. It was treated by a suspensory, strapping and alterative ointments, but steadily and slowly enlarged until October, when it became nodular and fluctuant at two points, encroaching more and more upon and around the testicle. Dr. Gunn saw him about this time and opened an abscess, regarding it as a simple abscess of the connective tissue and not involving the gland. It continued to discharge, the testicle increasing in size and the health of the patient declining until December, when a consultation was held. Drs. Gunn and Fenger advocated the removal of the diseased organ. Dr. Andrews favored temporizing. It was removed on January 11, 1882, and found to be tubercular. This operation was also followed by a circumscribed peritonitis and cellular induration along the cord. Prompt recovery followed, and he has enjoyed excellent health since.

Case 3.—Boy, æt. 8 years. I was called to reduce a strangulated hernia, when I found a simple hydrocele.

Case 4.—W., æt. 60. Had been troubled with an old inguinal hernia for years. On November 10, 1880, it came down and could not be returned. Four days later an operation was made, when, on opening the peritoneal sac, a cyst was found that had acted as a valve at the neck of the canal, preventing the return of the bowel by taxis. This condition was not suspected prior to the operation.

Case 5.—Chas. M., æt. 23. Had a right oblique inguinal hernia for ten years, supposed to have come from the kick of a horse. On February 6, 1883, it became strangulated. At the examination a large painful tumor was found. Within the external ring in the inguinal canal a smaller tumor was detected, which proved to be an undescended testicle. The gut was returned to the abdominal cavity, and as the testicle was useless and in the way of wearing an appropriate truss, it was removed. The young man made a good recovery.

Case 6.—J. W., æt. 46, had a congenital left inguinal hernia. On September 15, 1882, the bowel came down and became strangulated. Thirteen days later an operation was made, and a large mass of omentum and a knuckle of ileum found. These were returned, when the scrotum was found to be occupied by an immense hypertrophy of the cord and epididymis measuring eighteen inches in length and weighing twelve ounces. This was cut off and the stump tied at the ring. The patient died from exhaustion. This case is reported by Dr. John L. Atlee, and is certainly a rare complication.

Case 7.—In December, 1883, Dr. John Bell, of Benton Harbor, Mich., brought me a farmer, in consultation, who had multiple cysts of the cord. He had been treated by a quack for spermatorrhœa, said quack telling him that there were 478 cords running from his testicles to his heart, and if he had any operation done and a single one of those cords was wounded, instant death would ensue. I aspirated the cysts, and they have not refilled as yet.

Case 8.—Tuberculosis of testicle mistaken for cancer.

In conclusion I only desire to say that the diagnosis of scrotal tumors requires careful study and the employment of all the means at our command. No symptom should be lightly passed over and we should accept nothing on trust, but verify all statements ourselves. Diagnosis should be by exclusion.

1801 State Street, Chicago, Ill.

A CASE OF CONGENITAL ABSENCE OF THE OSTIUM VAGINÆ, AND DELIVERY BY THE ANUS.[1]

BY J. F. Y. PAINE, M.D.,
OF GALVESTON, TEXAS.
PROFESSOR OF MATERIA MEDICA, THERAPEUTICS AND HYGIENE IN THE MEDICAL DEPARTMENT OF TULANE UNIVERSITY, OF LOUISIANA, ETC.

"On April 24, 1885, late in the evening, I was called to attend Mrs. Hanna Thomas, who was suffering the pains of childbirth. Her age was 35, and she bore every outward sign of perfect physical development, and of being well nourished. I was told by the midwife that she had been in labor since the middle of the day preceding. The membranes had been ruptured early in the labor, and the patient was very much prostrated by her protracted and inefficient efforts to expel the fœtus. The unsatisfactory progress caused her attendant to request the calling in of a physician.

"Examination developed an entire absence of the vaginal orifice, and passing my finger along the perineum, it sank into the distended anus, and encountered the fœtal head just within the opening. The anus was dilated to about the diameter of three inches. Never having met with such a singular complication attending labor, I sought the advice and assistance of my friend Dr. J. F. Y. Paine."

The foregoing history is furnished by Dr. G.S. Sykes, the professional attendant of the case in question.

Examination confirmed the diagnosis of Dr. Sykes as to the absence of vaginal outlet, and revealed the presence of the fœtal head within the rectum, arrested at the distended and resisting anus. A clammy skin, sighing respiration and rapid, feeble pulse, told the story of strength wasted by a fruitless labor. The uterus, exhausted by its unavailing efforts, was acting in the most feeble manner; the anus, though considerably dilated, was insufficiently so to admit the passage of the fœtal head, and was rigid and unyielding. The indications were too clear to admit of a doubt as to the treatment. Chloroform was administered to the third degree, a Simpson's obstetrical forceps applied with comparatively little difficulty, and by moderate effort the head was promptly delivered. The shoulders and trunk were delivered by a *vis a tergo* exerted by squeezing and downward pressure on the uterus through the abdominal parietes. The placenta was speedily expelled by expression.

There was no apparent laceration of the anal sphincters. There was no unusual hæmorrhage at the time of her accouchement, nor was there subsequent oozing. Firm tonic contraction of the uterus quickly followed a dose of ergot. The anus regained its normal characteristics within a few hours. The subsequent treatment was conducted on general principles, viz.: rest in the recumbent posture, antiseptic irrigations per rectum, etc. There was nothing uncommon in her convalescence. She was able to sit up on the sixth day, and entered upon her accustomed domestic avocations at the end of the second week.

On the 8th of October, five months and sixteen days after her accouchement, I was granted the privilege of a thorough examination, and found, as already stated, entire absence of the ostium vaginæ. All the parts within the vulva presented the characteristics of virginity—the clitoris was normally developed and situated; the vestibule and posterior commissure bore no signs of having been stretched, distorted, or lacerated by childbirth; the urethra was in its proper place; the nymphæ and labia majora were in every respect natural in their virginal symmetry of outline. Two fingers were readily introduced into the rectum and passed upward along the anterior rectal wall for a distance of about two inches, when it was clearly appreciable that the surface gradually sloped forwards and upwards and merged into the anterior vaginal wall, which at this point was natural in its anatomical relations. From a half to an inch below the *os uteri* could be distinctly felt the free edge of a membranous curtain, which represented the upper third of the recto-vaginal septum. There was nothing abnormal either in the size or position of the uterus, or in its relations to the vagina.

Examination with the speculum fully confirmed the revelations of the digital exploration. The most painstaking investigation failed to detect the slightest trace of cicatricial tissue. My conclusion was that the malformation was congenital.

This woman has borne three children, all at full term and well developed, but dead. The cause of death seemed to lie in the early drainage of the amniotic fluid, and the protracted labor. Nothing noteworthy occurred during either of her accouchements, except their continuance beyond ordinary limits and the exhaustion which, as a natural consequence, ensued. Her labors had lasted, she said, about two days; but had not in either instance been followed by fever, pain, abnormal discharge or other evidence of inflammatory action. Her convalescences had been uniformly short; sitting up on the sixth day, and resuming her ordinary duties at the end of the second week. Menstruation has always been regular (except during pregnancy) as to interval, duration and quantity lost, and painless. Sexual desire and its gratification during coitus was in every respect satisfactory. She had never been made aware, either by the exit of the menstrual flux, the method of sexual intercourse, or even the strange manner of her accouchements, that she was different from other women. Her husband, after being closely questioned, asserted most positively that he had never entertained the faintest suspicion that there was anything the matter with his wife, out of the usual order of things.

[1] Read in the Section on Obstetrics, at the Thirty-Seventh Annual Meeting of the American Medical Association.

MEDICAL PROGRESS.

A CASE OF SHORTENING BY OPERATION THE BONES OF THE LIMBS IN THE TREATMENT OF INJURIES COMPLICATED WITH EXTENSIVE DESTRUCTION OF THE SOFT PARTS.—DR. MARTEL, of St. Malo, first conceived the idea, in 1882, that when extensive destruction of soft parts had taken place it would be better to reduce the bones to a corresponding

length by resection than to rest satisfied merely with amputation. He was then attending a suitable case, but he was restrained from putting his idea into practice at that time, partly by the advice of a surgical friend, and partly by the untoward course of the case in question.

However, on June 2, 1885, a patient, B., æt. 32 was taken into hospital with a very severe compound fracture of the left leg. Anteriorly was a large wound whose extent was due to actual destruction rather than to retraction of the skin and subjacent tissues. The tibial fracture, oblique and not comminuted, was exposed in this wound, the ends overriding. The fibula was fractured in the middle.

The wound and its recesses were carefully washed with "strong" carbolic lotion, and afterwards, the limb was enveloped in a thick "*appareil ouaté*. The immobilization removed all pain. Reaction was moderate, (on the third day, evening, temp. 39.8.) Quinine for the fever; morphia and chloral for insomnia. Appetite returning. The remainder of the history is that of a suppurating, but not inflamed wound, with sloughs separating and cicatrization progressing up to February 25, (the fifty-fifth day of the treatment). On this day Dr. Martel resected about 75 millimétres of the tibial shaft, sawing obliquely both above and below. Much of the bone removed was necrosed. A corresponding portion of the fibula was removed through a separate opening. The two tibial fragments were sutured with a single stitch of thick silver wire, which does not appear to have held them very firmly together. The carbolic spray was used during the operation, and both during the operation and afterwards, the wound was carefully washed with "strong" carbolic lotion. Drainage with a large tube behind the fragment. Then carbolized charpie dressing and gutta-percha splints. On March 25 it is noted that "the osseous segments are united, but the uniting tissue is flexible." On or about this date the silver suture was removed from the bone. On April 25 "consolidation appeared complete." June 8 a fenestrated, silicated bandage was applied. August 3 "only two small lenticular" ulcerations remained, which soon afterwards healed completely.

The amount of shortening was 7 to 8 centimétres. There was a good deal of stiffness of the ankle joint. But otherwise everything was satisfactory; the limb was well shaped, and crutches and sticks were shortly discarded for a high boot.

The author is only cognizant of a single instance in which a surgeon was guided by an idea analogous to his own. In the *Centralblatt für Chirurgie* No. 50, 1884, Karl Loebker published a case in which, in order to facilitate apposition and suture of the ends of nerves and tendons, cicatrised and contracted after a transverse wound of the forearm, he resected portions of the radius and ulna. This operation was only moderately successful as regarded the ultimate results.

With regard to the question of what is the best time at which to undertake an operation like the author's he points out that, until sloughs have begun to separate, it is not possible to be certain of the limits of destruction. After stating other considerations, he gives his opinion that the most favorable moment for resection is to be found between the tenth and twentieth day after the accident.—*Gaz. Méd. de. Paris*, 1886. Feb. 27, March 13 and 20.

Segmental Neuritis.—There appear to be good grounds for the division of neuritis into "interstitial" and "parenchymatous" varieties. The latter form has many causes, but the pathological anatomy, consisting in a series of modifications ending in atrophy of the nerve, presents but little variety in its characters, and has a close resemblance to the series of changes such as occur in the Wallerian degeneration of divided nerves. Apart from this form there is another, described first by Gombault, under the name of "névrite segmentaire periaxile." Guinea-pigs submitted to a process of slow poisoning by lead, without presenting any sign of localized or diffuse paralysis, yet became the subjects of a scattered neuritis of such a kind that one part of the length of a nerve fibre was inflamed, whilst the parts above and below it were in a normal condition; these disseminated patches sometimes occurred in more places than one on the same nerve fibre. Generally the alteration involves a single nerve segment, but it may transcend these limits or even be restricted to a portion of one segment. The process is of a genuine parenchymatous character, but affects only the myelin sheath and the protoplasm of the sheath, not the axis cylinder, which is never interrupted, and remains in relation with its centres; the nuclei multiply and the myelin undergoes segmentation. This form of neuritis is not special to guinea-pigs or to cases of chronic saturnism. It occurs also in man, and Gombault has observed it in the subjects of protopathic muscular atrophy, amyotrophic lateral sclerosis, and traumatic neuritis. He has also described it in a case of diphtheritic palsy, and in one which clinically resembled acute ascending paralysis.. However, this periaxial segmental neuritis has not been frequently observed in further researches on the pathological anatomy of peripheral nerves, and since 1880 P. Meyer alone has given a description of its existence in a case of diphtheritic paralysis. In the *Archives de Neurologie*, No. 33, MM. Pitres and Vaillard—already well-known for their researches, especially on parenchymatous neuritis—have described an interesting case of pulmonary tuberculosis on which cutaneous diphtheria became grafted, and was followed by amblyopia, paralysis of the soft palate and limbs, with disorders of sensation, paresis of the diaphragm, irregularity of the heart's action, and death from pulmonary hæmorrhage; the brain and spinal cord were found to be healthy, but the peripheral nerves and spinal roots exhibited the changes indicative of the segmental form of neuritis. It has been shown by the same observers that peripheral neuritis occurs in tuberculosis, and they discuss the question of the dependence of the changes spoken of above on diphtheria or tuberculosis. For fuller information reference should be made to the valuable paper, which is illustrated by well-executed plates.—*Lancet*, June 12, 1886.

NITRO-GLYCERINE IN BRIGHT'S DISEASE.—The employment of nitro-glycerine in chronic renal disease, for the valuable service it renders in dispelling or moderating uræmic symptoms, is based upon the fact that high arterial tension is the constant concomitant of uræmia. How far it is desirable to habitually employ a remedy having so pronounced an action upon the circulation as nitro-glycerine is yet undetermined; but experience of its value in the diseases which are marked by abnormal arterial tension is accumulating. The latest contribution is by DR. KINNICUTT, of New York (*Medical Record*, April 17, 1886), who has studied the effects of the drug in several cases, with results which harmonize with those obtained by Rossbach and Burzbinski, to which allusion is made. The continued employment of the drug in slightly increasing quantity does not only relieve headache, dyspnœa, palpitation, and other symptoms referable to the uræmic state, but is marked by an increase in the diurnal excretion of urine, together with a notable diminution in the amount of albumen in it. Cases are given where the albumen was noted quantitatively, and they show that in some the drug has a marked effect in its reduction. At the same time, as one case shows, there is often great variability in the albuminuria of chronic nephritis, which renders it important that similar observations should be made on a large scale before trustworthy conclusions can be arrived at. The amount of nitro-glycerine administered should be just within the limit of producing any subjective symptoms. Dr. Kinnicutt's conclusions may be given in his own words: "1. That in nitro-glycerine, given in small doses and frequently repeated, we possess a powerful agent in lowering the increased blood-pressure which is very constantly associated with the development of uræmic symptoms. 2. That it has the power to control or relieve many of the paroxysmal disturbances of the nervous system which are included under the general term of uræmia; of these, headache and asthma are especially benefited by its use, the relief being more marked and continuous than that obtainable either by opium or chloral. 3. That its influence upon the daily excretion of urine and serum-albumen in parenchymatous and interstitial nephritis is apparently to increase the former and diminish the latter. 4. That in the systematic and prolonged use of nitro-glycerine in appropriate doses, in chronic nephritis, we possess a means of maintaining more or less continuously a lowered blood-pressure, of often averting or relieving critical conditions, and thereby prolonging life."—*Lancet*, June 12, 1886.

ABORTIVE TREATMENT OF MAMMARY ABSCESS.—DR. LLEWELLYN ELIOT, of Washington, says: "About fifteen years ago I witnessed the beneficial effects of the free application of spirits of turpentine to abscesses and whitlows in their early stages. The result in each case in which such applications were employed was a drying up and disappearance of all traces of inflammatory or suppurative processes. From the earliest years of my professional life this has been a routine treatment with me, and arguing from analogy, it has been adopted in cases of mammary abscess when seen in its incipiency. The only disadvantage attending this treatment is the odor of the turpentine, which is of no importance when contrasted with the intense pain, sleepless nights and suffering accompanying suppuration of the gland.

"If upon the discovery of a drawing pain upon suckling, or a tender, hard spot in any part of the gland, the part be bathed with the spirits of turpentine, and then covered with a cloth, rag, or piece of flannel saturated with the same, we may, as a rule, look for the disappearance of the hardness, the tenderness, and all other uneasiness attending this troublesome affection, in the course of two, or at the most, three days. During the course of such a treatment the child may be nursed from the affected breast, but not as frequently as from the well one. It is hardly necessary to say that all traces of turpentine should be washed away before such nursing. The amount of milk secreted has never appeared lessened in the cases observed, nor have any of the ill results of the continued use of turpentine followed either in the mother or in the child.

"Whether this manner of dealing with this affection be in general use or not cannot be said, still there is no mention of it in many of the recent text-books on obstetrics. It is not claimed to be infallible, but its application will be attended with no bad results even if it be unsuccessful. Strapping, pressure, rest, applications of belladonna and soap-liniment, and the continuous application of an ice-bag, are among the various modes of treatment employed, but my faith now centres around the application of turpentine as an abortive of mammary abscess."—*Medical Record*, July 31, 1886.

SUGAR AND CORROSIVE SUBLIMATE AS A FIRST DRESSING IN WAR.—DR. HEIDENREICH, in a paper published in the *Vrach*, Nos. 19 and 20, strongly recommends as a first dressing on the field of battle a mixture of corrosive sublimate with powdered sugar in the proportion of 1 to 1000. It is important that when this is prepared the sublimate should be evenly distributed, and this is easily affected by first dissolving the mercurial salt in a little spirit and then carefully rubbing up the sugar with it. The spirit ultimately evaporates and leaves a powdered mass of uniform composition. A little packet is supplied to each soldier, containing a capsule in which is 5 grammes of the mixed powder—i.e., $\frac{1}{200}$ of a gramme of sublimate—for the purpose of sprinkling on the wound; also a good-sized piece of gauze impregnated with $\frac{1}{3}$ per cent. of its own weight of sublimate by means of Bergmann's process, which consists of dipping it in a solution containing 10 parts sublimate to 500 glycerine, 1000 alcohol, and 1500 water. Some hygroscopic wadding is also supplied, and this, when enclosed between two folds of the gauze, forms a dressing measuring 650 sq. centim., which is large enough to cover a somewhat extensive wound. The whole is enclosed by means of a layer of varnished paper and a triangular bandage, which is fastened with two safety pins. The author claims for this mixture of sugar and sublimate the advantage of being

a particularly powerful antiseptic and quite innocuous. Sugar, he says, is the best substance for diluting the sublimate, being itself somewhat antiseptic. This dressing has also the additional advantage of being suitable for use wherever water may be procurable. This, of course, is not always the case, and where it is the source is frequently in a marsh or pool of anything but hygienic appearance. Under these circumstances he advises that filtration should be resorted to, and consequently proposes that a kind of filter consisting of flannel impregnated with sublimate should be included in the packets supplied to the men. The whole contents of the packet weigh only 75 grammes, and are exceedingly portable and inexpensive.—*Lancet*, June 12, 1886.

The Diagnosis of Tubercular Disease of the Urinary Organs.—Dr. Irsai, in the *Wien. Med. Presse* (No 36, 1884) records two cases in which tubercular disease of the kidney was diagnosed from the presence of Koch's bacillus in the urine, the diagnosis being confirmed by *post-mortem* examination.

M. de Gennes (*Ann. des mal. des org. génito-urin.*, September, 1885), says that the discovery of tubercular bacilli in the urine is difficult, partly because centres of tubercular disease are often present in the kidneys for a long time without discharging their contents into the urine, and partly because of the excessive dilution of the bacilli in the urine. Hence, one may not find the bacilli in the urine, although the urinary organs are the seat of tubercular disease; but on the other hand, one must not mistake for Koch's bacillus any of the many bacteria which grow in altered urine. It is necessary, therefore, to examine only the sediment of the urine after it has stood for several hours, and in the examination to be careful to declorize with nitric acid very thoroughly. Even with these precautions, and after examining numerous specimens, it is rare to meet with more than two or three bacilli. He has in five cases of cystitis, however, determined the tubercular nature of the disease by finding the bacilli in the urine, while there was no other evidence of tubercular disease in the cases. His conclusions are, that just as in the case of the lungs, so in the case of the urine, if one finds no bacilli, one cannot infer that there is no tubercular disease; but, if one finds even a single bacillus, of the nature of which one is absolutely certain, then the diagnosis of tubercular disease is affirmed.—*Revue des Sciences Médicales*, Jan., 1886.—*Glasgow Medical Journal*, May, 1886.

Quinine for Traumatic Neuralgia.—In a note on this subject Mr. F. J. Hart says:

That quinine cures neuralgia, especially of the asthenic type, is a matter of ancient history, but it is not so generally recognized that it is useful in the following severe injuries:

Case 1.—This was a case of dislocation of shoulder by direct violence, with great bruising. After reduction, agonizing pain set in, following the course of the brachial plexus. It was compared by the patient to the "gnawing of a dog." Sleep was quite banished. Chloral and opium, in full dose, gave no relief. A 5-grain dose of quinine, however, gave almost instant ease, with some hours' sleep; and, although the pain returned, it was always controlled in the most remarkable manner by the quinine. Only three or four doses of the remedy were required.

Case 2.— In a severe wrench of the shoulder, with rupture of muscular fibres, attended with great pain, especially at night, relief was quickly obtained by 4-grain doses of quinine, given every six hours. The patient described the effect of the medicine as most rapid and soothing.

Case 3 was one of a fall from a ladder, producing fractured rib and contusions. There was great pain, "not one wink of sleep," in spite of chloral (gr. 25) and opium (1 gr). The patient was very violent and excitable. A fourth of a grain of morphine, hypodermically injected, calmed him somewhat; but the pain returned, and as I did not wish to push the opium, his kidneys being defective, I substituted 2 gr. of quinine ever four hours. After this, he got much better, and confessed that he could bear easily the little pain which remained. All these patients were full-grown men.—*British Medical Journal*, June 5, 1886.

Re-Injection of Blood During Amputation at the Hip-Joint with Rapid Recovery.—By A. G. Miller, M.D., Edinburgh. In a case of strumous disease affecting both hips, the left knee and the left elbow, with a large abscess connected with the left hip, the patient being in very feeble condition, amputation at the latter joint became necessary. The limb having been exsanguinated to the middle of the thigh, and a powerful elastic tourniquet applied at the groin, a rapid circular cut was made right down to the bone in the upper part of the thigh, the femur sawn through, the femoral artery and some smaller vessels tied, and the tourniquet removed; some hæmorrhage still occurring from a few small vessels, they were also ligatured. All the blood which escaped, both from the femoral artery and the smaller vessels, amounting to eleven ounces, was caught in a vessel containing a solution of phosphate of soda and re-injected into the deep femoral vein. By an incision on the outer side of the thigh the head of the femur was then dissected out. The wound was dressed antiseptically. The patient suffered no shock whatever, nor depression of temperature after the operation. For the first few days, he was flushed and had a fuller pulse than before the operation, but he had no rise of temperature. The weakness and the anæmia of the patient, together with the increased vascularity of the parts due to the disease, rendered it very likely that he would not have survived the operation, had not the greater part of the blood lost been re-injected—the fact being that from the exsanguification of the leg, together with the reinfusion, there was probably an ultimate gain of blood after the operation.—*Edinburgh Med. Jour.*, February, 1886. —*Annals of Surgery*, 1886.

Coagulation of the Blood.—In a short paper with the above title, Dr. Ernst Freund relates the results of his experiments undertaken to show the effect

of oil in hindering the coagulation of the blood after it is withdrawn from the body. Blood from the carotid of a dog collected under oil remained fluid at ordinary temperatures for twenty-four hours; as did also blood which had been poured into glass vessels whose walls had been smeared with vaseline. In the latter case coagulation did not ensue even if the blood were stirred with an *oiled* glass rod, although it took place in a few minutes if the blood were poured into an unoiled vessel, or were stirred with a dry glass rod. If blood caught in this way were prevented from drying, and if contamination with dust was prevented, coagulation might be prevented for several days, during which the corpuscles sank to the bottom, leaving the clear plasma on the surface. Similar observations were made with oiled cannulæ and tubes, in which the blood remained fluid. As the result of his experiments the author comes to the conclusion that, as on the one hand the absence of adhesion of the blood to the walls of the vessels prevents coagulation, so, on the other, if any adhesion is allowed, after the blood is drawn from the body, this acts as the starting-point of the coagulation.—*Medizin. Jahrbücher*, Heft. i, 1886, page 46.—*Glasgow Medical Journal*, May, 1886.

TUBERCLE BACILLI IN ADDISON'S DISEASE.—It has long been held by some writers that the fibro-caseous change which characterizes the suprarenal bodies in Addison's disease is of tubercular nature, and the histological characters upon which this opinion rests have been strengthened by the detection of the bacillus tuberculosis in the morbid material. For this observation pathology is indebted to Herr Goldenblum, of Dorpat, in a well-marked case of the disease which he examined in 1884. The subject was a man 24 years of age; there was well-marked bronzing of the skin and mucous membranes, caseation of both suprarenals, general wasting, pulmonary emphysema, cloudy swelling of the heart fibres, liver, and kidneys, and swelling of the intestinal solitary glands and the portal lymphatic glands. At Professor Thomas's suggestion the diseased capsules were examined by Ehrlich's method, and large quantities of tubercle bacilli found in the caseous masses (Virchow's *Archiv*, Bd. 104, s. 393). Although Guttmann in 1885, and Rausenbach in the present year, have reported cases of suprarenal bacillary tuberculosis, yet in neither case were symptoms of Addison's disease prominent, and both these cases must yield priority to Goldenblum's. He remarks that on the bacillary test his case goes to prove that in Addison's disease, in which the capsules are the only organs that exhibit caseation, the lesion must be regarded as a local tuberculosis, unless it can be proved that the occurrence of the bacilli is a secondary event.—*Lancet*, June 12, 1886.

INTUBATION OF THE LARYNX.—In a report of the Chicago Medical Society, Dr. Strong describes a successful case in which a No. 2 O'Dwyer's tube was kept in a child's larynx for sixty-eight hours. The affection was acute catarrhal laryngitis.

At the same meeting Dr. Waxham stated that he had often used tubes, and spoke of seventeen cases, with eight recoveries. It is important to note that Dr. Waxham had used them in cases of diphtheria.

Dr. Allan, Glasgow, in *Outlines of Infectious Diseases* (Churchill, 1886), refers to the use of tubage in the treatment of diphtheria, and recommends Macewen's tubes as a valuable method of treatment.

Considering the unsatisfactory state of our therapeutics in diseases of the larynx accompanied by membranes, and the frequent necessity of operative interference, the results of those who have tried tubage must be carefully noted. There can be little doubt that tubes will prove invaluable in many conditions of the larynx when asphyxia is threatened. It would perhaps be right to say, however, that most surgeons express considerable doubt as to the efficacy of tubage in conditions associated with the formation of membranes (particularly in diphtheria), and hence such cases as the above rather indicate a more extensive trial of this operative method.—*Glasgow Medical Journal*, May, 1886.

ALBUMINATES IN MILK.—SEBELIEN describes in the *Zeitschrift für phys. Chemie*, vol. ix. p. 444, two new albuminates of milk besides caseine, viz., lactoglobulin and lactoalbumen.

1. To obtain lactoglobulin, the milk is first carefully neutralized with soda lye, in case it be of an acid reaction, and then saturated with chloride of sodium. The filtrate on being warmed produces a flocculent precipitate, which consists principally of phosphate of lime; the filtrate of this, on being saturated with sulphate of magnesium, precipitates lactoglobulin. The percentage of lactoglobulin in milk is very small.

2. Lactoalbumen is obtained by adding one-fourth per cent. of acetic acid to the filtrate of milk, mixed with sulphate of magnesium. By solution in water, dialysis, precipitation of the remaining solution through alcohol, and washing with alcohol and ether, lactoalbumen can be obtained as a white powder, wholly soluble in water. Lactoalbumen is by no means identical with serum albumen, and differs from caseine in containing a higher percentage of sulphur (the former having fourteen per cent., the latter seven per cent.), and a lesser percentage of phosphorus.—*Therapeutic Gazette*, June 15, 1886.

SALOL.—PROFESSOR VON NENCKI, of Berne, has discovered a new antiseptic, to which he has applied this name. It is a whitish aromatic substance, insoluble in water, but soluble in alcohol. It is highly recommended as a substitute for the salicylate of sodium in the treatment of acute rheumatism, as it is alleged that it does not cause the nausea and other unpleasant effects of the latter salt, and is more rapid in its action. It is a valuable antipyretic in phthisis. As an antiseptic it is said to be of value in the treatment of intestinal catarrh, typhoid fever, and cholera. From the fact that it prevents urine from decomposing, it is suggested as a local application in vesical catarrh. As a powder suitable for sprinkling over wounded and ulcerated surfaces it is said to possess all the antiseptic properties of iodoform without its disagreeable odor.—*N. Y. Medical Journal.*

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, AUGUST 14, 1886.

THE DIAGNOSIS OF INFECTIOUS DISEASES.

At a recent meeting of the New York County Medical Association, PROFESSOR E. G. JANEWAY, the worthy successor of the late Professor Austin Flint in Bellevue Medical College, read a paper on "Certain Points in the Diagnosis of Some of the Infectious Diseases." In the preparation of this paper he was able to bring to his aid his large experience in private and hospital practice, especially that gained by a several years' service as one of the Health Commissioners of New York City.

In speaking of smallpox Dr. Janeway said that he had known the beginning of a considerable outbreak of the disease to be traced to a single mistake in diagnosis. He thought that one of the greatest safeguards against an error in diagnosis as regards smallpox, consisted in having such a classification of the affection fixed in the mind as should seem to take account of the various methods of its manifestation. From many of the text books important facts bearing on the method of development of certain forms of the disease are omitted; and he suggests the following classification as convenient: 1. Purpura variolosa. 2. Variola vera. (a) Confluent; (b) Discrete; (c) Corymbose; (d) Hæmorrhagic. 3. Varioloid. 4. Variola varicelloides. The distinction between purpura variolosa and the ordinary hæmorrhage type, where the blood is extravasated with the vesicles, should be kept in mind, and this is best accomplished by making such a classification as the one given. Many have failed to recognize or to have any knowledge of the existence of this form; and many errors of diagnosis must be attributed to this. One great danger is in making mistakes between this disease and a malignant type of some other infectious diseases. The full history of the case should be obtained; the possibility of a visit to a strange place, the getting of some cloths, etc., may furnish a clue in the absence of other clue. As an illustrative case he cited one to which he was called in another city, to decide as to the nature of a strange variety of fever. One patient had already died, and a second was seriously ill with it. He found the latter sitting up in bed, with a weak pulse, though with but little febrile movement, and suffering with dyspnœa which appeared to be due to changes in the blood. There were purpuric spots over the chest, abdomen and legs, and in one place there was a small vesicle, of no determinate character; but nowhere were there any papules or umbilicated vesicles. He suggested that the disease was probably purpura variolosa, and this opinion was confirmed, *first*, by learning that the patient had attended the one who died (the fatal issue taking place about twelve days before the beginning of his own sickness); and *secondly*, several of those who had been exposed during the sickness and at the funeral of the first patient were down with the fever; and that at least one of these had an eruption which proved to be discrete smallpox. This case, he thought, illustrated three points in establishing a diagnosis: 1. It is important to know the nature of the disease from which a malignant case, itself not possessing positive features, has developed. 2. Should the patient have died this may be done by an investigation of others exposed to the original case; these having perhaps a milder and more characteristic type of the malady. 3. The result of exposure to the malignant case may in some instances be a proof of the nature of the disease. He was particular to emphasize that we must not be content to simply consider the eruption and the patient's condition, but must use every means in our power to establish a correct opinion as to the nature of the disease producing this state which is demonstrated purpuric or malignant. He also introduced a case to illustrate the importance of sometimes making an autopsy to decide the nature of a doubtful disease.

Mistakes between smallpox and scarlatina may occur in those cases of variola in which a marked red efflorescence first occurs, followed by darker spots and papules, and finally by vesicles. In some cases petechiæ appear in places, and hæmorrhages follow; and not infrequently in severe cases the vesicles may appear first on the inner aspects of the the thighs and in the axillary spaces, the face being free. As the throat may be sore at this time as a result of the eruption, a mistake may be made if the order of events be not kept in mind. Such mistakes

have been made in these cases as considering the vesicles sudamina. One point to be remembered is, that an examination which omits an inspection of the abdomen and chest, and particularly of the inguinal and axillary regions, may lead to a mistaken opinion in the case of a severe infectious disease.

In regard to measles there may be a two-fold mistake: On the one hand the first stages of the small-pox eruption, prior to the formation of the vesicles, may lead one who looks hurriedly at the case, and does not consider the invasion symptoms, to diagnosticate measles. The other mistake occurs when one looks at a severe case with a red skin, and in it a number of dark maculo-papules, together with hæmorrhages of larger extent, and hæmorrhages from other places, as the nose. One who sees the first stage may consider it as scarlatina; while a little later the numerous papules may lead to a mistaken diagnosis of black measles.

The mistake of considering syphilitic eruptions as variola is more common than the reverse. Most of these mistakes are the result of want of close observation of the whole eruption, together with a consideration of the history of the case. The multiformity of the rash, the condition of the glands, and the duration of the disease should determine in a large number of cases the correct diagnosis; to which the history adds confirmatory evidence. In Dr. Janeway's experience syphilis causes more mistakes than other disease except measles. An additional point in the diagnosis is the absence of the eruption on the hands and feet, and in the mouth in cases of syphilitic pustular eruption, otherwise pretty generally distributed over the body.

In speaking of variola and varicella he well remarked that students may be puzzled by finding opposing statements regarding the varicellous eruption, not only in different text-books, but sometimes also in different parts of the same work. The danger in mistaking varicella lies in attending too closely to the eruption, for at times a slight induration is met with at the base of some of the pits of varicella, due to irritation. A careful search will generally show on the back and buttocks, as well as behind the ears, characteristic spots; while in other places the eruption may be more or less altered. In doubtful cases attention should be paid to the cause of the attack, if known, and to the time of the development of the eruption after the patient was taken sick. Dr. Janeway has known of several cases of variola contracted from cases which had been pronounced varicella by careful examiners. In varioloid he had met several cases of varicella-like eruption; so that he believed in making a subdivision of the diseases which should include this, under the head of variola varicelloides.

Typhus fever, when well-marked and with the characteristic eruption, causes little trouble in diagnosis. The earliest cases of an outbreak are, however, not always so well developed, and consequently, the disease may gain headway. In children, particularly, there may be great difficulty in deciding between typhoid and typhus. If we could study a number of cases, we might find the average duration an aid in diagnosis; but this applies more especially to the case of adults. A fever the great number of cases of which terminate (many of them comparatively suddenly) between the eleventh and fourteenth days, should always raise the suspicion of typhus. An autopsy should always be made as a sanitary necessity (should the opportunity occur) to decide the nature of a doubtful outbreak of fever. The lesions of typhoid are characteristic, while those of typhus are in some respects negative; but, in practice, if one of a number of cases of fever which has lasted longer than a week should present, on autopsy, only an enlarged spleen, with minute hæmorrhages on the serous membranes and parenchymatous degeneration of the liver and kidneys, we should feel justified in considering it due to typhus in this climate. Where isolated cases are concerned, it is advisable to examine the intestinal mucosa and the muscles, so that trichinosis may be excluded. We should attach great value to an examination as to the nature of the disease occurring in other inmates of the house, or among the friends of a fever patient, as an early aid in deciding upon the true cause of a case of fever. The neglect of this has often led to serious results. We may admit that typhoid fever may occur with typhus; but, in practice, two or more persons exposed to the same cause of fever should, if becoming sick with a febrile complaint, notwithstanding certain differences in the manifestations, be considered as having the same disease. This is an important point, because, owing to some differences in the eruption and certain minor details, physicians have at times been told that of two members of a family sick, one had typhus, and the other typhoid fever.

The use of antipyrin may cause the appearance of a profuse, measly rash, which may lead the physician in attendance to suppose what he has primarily considered typhoid to be a case of typhus. As regards diarrhœa, all practitioners know that not a few cases of typhoid run their course without it; and, again, it may occur in typhus, although the stools have not the peculiar character of those of typhoid. Typhus fever is not only likely to be considered typhoid, but

also to be mistaken for cerebral inflammation, and particularly for cerebro-spinal meningitis, on account of a peculiar petechial rash in the latter. In doubtful cases optic neuritis, if present, will decide in favor of cerebro-spinal inflammation. But, notwithstanding the fact that Dr. Janeway had had a considerable experience with cerebro-spinal fever, he had not as yet seen a single case in which the rash resembled that of typhus. Moreover, we very frequently meet with herpes of the face and lips in cerebro-spinal disease; but so rarely in typhus and typhoid fevers as practically to amount to an almost pathognomonic sign against these affections, if present in a doubtful case. It may occur in so many other conditions, however, that its presence is of no diagnostic value, except as against the probability of either typhus or typhoid. Flea-bites occurring in typhoid fever have in some cases caused a diagnosis of typhus.

Tuberculosis is a condition which causes not a few mistakes in the diagnosis of typhoid fever, and, at times, of typhus also. Meningitis is so rare a complication of typhus or typhoid that its existence should always raise the suspicion of another process, and more particularly of tuberculosis. If choked disc be found on ophthalmoscopic examination, it will still further increase the probability of this affection. The next step is to ascertain if at any point of the body there is a tubercular lesion accessible to proof or strong suspicion; or if from the previous history there is any probability of such a condition of the lungs. It should be remembered that examination of the lungs in unconscious, and particularly in comatose, conditions is extremely unsatisfactory; and very good examiners have supposed the lungs to be in health when making examinations in such states, while in reality they were the seat of advanced phthisical processes. If decided proof should exist, on examination, that the lungs are the site of disease which, from its position, may be assumed to be tubercular, then it would, with the foregoing facts, be violence to evidence to call the disease typhus or typhoid, unless absolute proof of the presence of one of them could be obtained; as, for example, by the characteristic eruption of typhus.

Some suppose that the finding of bacilli in the sputa will invariably decide the question between typhoid fever and tuberculosis. If the examination be made with care, and every precaution be taken in collecting the sputa to be certain that there is no contamination of the vessel or of the sputa after collection, then the presence of indisputable bacilli would be proof. But if it be supposed that anyone could make the examination and decide, and if the usual manner of collecting sputa be employed, there are undoubtedly chances for error. Again, bacilli might not be found in the sputa, because of lack of care in selecting the proper portions for examination, and in some cases as a result of employing the short method for staining. While Dr. Janeway has been able to make some very good diagnoses by this means, he has met with cases in which phthisis had been diagnosticated from finding a few bacilli; yet the subsequent course of the disease, or an autopsy, disproved the diagnosis. There are certain things which a hasty observer may mistake for bacilli, such as small crystals which appear red as the light is refracted in passing through them, insufficiently decolorized bacteria of other kinds, etc. But both typhus and typhoid fever may coexist with phthisis.

Pyæmia, more particularly that dependent on otitis media and bacterial thrombosis of the lateral sinuses, also causes mistakes in diagnosis, as against typhus and typhoid fever. The reason for this is that, in the unconscious or delirious state in which patients thus affected may come under observation in hospital practice, no mention is made of the old ear trouble, and no examination of the ear is likely to be made. The irregularity of the form, the not infrequent coexistence of meningitis or cerebral abscess, with phenomena more or less suggestive of these conditions, the history or personal observation of suppurative discharge from the ear, and that it had perhaps become foul or been arrested, tenderness or œdema over the mastoid process, and the observation of abscesses in the cellular tissue or of joint inflammation, should at once lead to a probable diagnosis of otitis media. In one case related, the patient being a woman suffering from some fever of doubtful nature, Dr. Janeway found as a useful aid to diagnosis thrombosis of the internal jugular vein, giving a firm feel to the vessel. During a year he has met with three cases of this malady, and in one the thrombosis of the lateral sinus was not of a completely obstructive nature, so that œdema behind the ear was absent. In a suspected case, jaundice will point towards pyæmia or septicæmia, as distinguished from the fevers in which its occurrence is comparatiuely rare; and such jaundice was present in one of the three cases referred to.

INTERNATIONAL MEDICAL CONGRESS.

In another department may be found "Circular No. 2," concerning the Ninth International Medical Congress, containing important information to the medical profession in this country and abroad. As

it is practically impossible for the Executive Committee to personally give this information to the profession, it is hoped that our exchanges will further the objects and work of the Committee and of the Congress by reprinting the circular.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, Wednesday, April 14, 1886.

THE VICE-PRESIDENT, W. H. TAYLOR, M.D., IN THE CHAIR.

DR. J. FORD THOMPSON reported a

CASE OF LITHOTOMY, WITH SPECIMENS.

The case was turned over to him by Dr. Hagner, who had suspected stone from the symptoms.

Wm. M., aged 64, had been suffering from well-marked vesical symptoms for fifteen months, but had been somewhat of a sufferer for a longer time. Examination by sound at once detected stone. He at first intended to do lithotrity, and had enlarged an abnormally small meatus with that operation in view. He found the urethra, however, so small that it would be impossible to pass a good-sized lithotrite, so he abandoned rapid lithotrity. Thinking that the calculus or calculi were small, he decided on the median lithotomy operation. On April 3, assisted by Drs. Hagner, G. W. Johnston and Cutts, the patient was anæsthetized, the bladder washed out and left full of warm water; the grooved staff was passed and the bladder was quickly and easily reached by the median line incision. On passing the stone-forceps a calculus was at once grasped, but it was found to be too large to be drawn out through the opening. A stronger pair of forceps were then introduced and the stone was broken and removed in sections. Other calculi presenting, also too large to be removed with the existing opening, it was enlarged by a lateral incision into the prostate gland. Two large calculi were now removed, with portions of one or two others, which emptied the bladder. There having been very little hæmorrhage and that having stopped, the patient was put to bed, leaving the wound open. The weight of the four calculi was 493 grains. The patient was making an excellent recovery. The urine was voided through the opening, but had been under the control of the patient from the first. Several times he had passed a small quantity of bloody urine by the natural channel, and on two occasions a sound had been passed the same way.

Dr. Thompson said there were two points of especial interest in this case. He had stated some time ago that lithotomy was much less used than formerly, and then chiefly on children. Here was a case where lithotrity was out of the question owing to the unusually small size of the urethra. He did not think that strictures were the cause of this, as there was nothing in the history to give ground for that belief.

The *second* point was the question whether the median or lateral incision should be made. He had been deceived in this case about the size of the stones, as the bladder was so completely contracted around them that he could hardly move the sound about. Most surgeons prefer the lateral incision, but the median was the easiest and in his practice had been followed by the best results. The supra-pubic operation was undoubtedly the best where there was a large stone, and was preferred by many good men when lithotrity was not applicable. Either the median or lateral operation may be followed by impotence; hence they should not be done on young men. In the supra-pubic operation it is absolutely necessary that the bladder be above the pubes. With this in view the bladder is filled with water, or a rubber bulb is introduced and then blown up; and lately he had seen a report where the calculus had been seized by a lithotrite and pushed up against the fundus of bladder. Dr. Thompson does not believe in leaving a catheter in the bladder in any case. He thinks it better to use it as required. In the case reported the temperature had never gone above 101°, and that was on afternoon of day of operation. At present the wound was granulating nicely and a good recovery was certain.[1]

THE CONSERVATIVE ELEMENT IN DISEASE.

DR. A. F. A. KING recapitulated some of the points considered in his paper read on April 7 (JOURNAL, June 5, p. 636), and proceeded, in accordance with the principles then declared, to present a provisional explanation of the *phenomena of fever* and their utility in contributing to preserve life. During an extensive acute inflammation, a pneumonia for example, which was simply a *non*-traumatic injury made by *in*visible weapons, or during a real traumatic injury made by visible violence, we immediately observed a new appropriation and distribution of nerve force—the appropriation made under normal conditions for maintaining the assimilative and digestive industries was now, as it were, recalled, and expended in repairing the injury. But, as the nervous centres must still be fed, and their functions maintained without interruption, and as metabolism of matter must still be continued to evolve force, disassimilation of fat and muscle (hence "wasting") must take the place of food pabulum. But this tissue-change produces excessive heat, which, however, is reduced by increased frequency of the heart's action, throwing the blood to the skin (which last thus becomes red and hot), and to the pulmonary vesicular mucous membrane (which is 1,400 square feet in area), where, and by which, blood refrigeration may be secured. The respiratory motions, during fever, are also increased in frequency and thus cool air is taken more plentifully into the lungs.

Again, the desires of the fever patient to bathe in and drink cold water, and which must always be con-

[1] April 29. Dr. Thompson reports the above case under this date as being perfectly cured.

sidered a part of the disease, are again designed for blood refrigeration, with other important uses. In brief, the sequence of events may be thus stated:

1. The injury.

2. Anorexia and arrest of digestive industries; arrest of muscular exercise and intellectual labor, the vital forces ordinarily used for these purposes being now appropriated to repair the injury.

3. In the absence of food supply, waste of tissue must be increased to evolve force by which the functions of the nerve centres, heart, etc., may be maintained.

4. Waste of tissue evolves excessive heat.

5. The phenomena (above described) for refrigeration reduce the heat, and so tend to preserve life.

In the hectic fever of consumption, it would probably not be far wrong to consider it as resulting from the (to use a figurative expression) disassimilating kitchens of the body, preparing an evening meal of force and material for the all-important nerve centres. It was questionable whether any of the various pills and mixtures given to relieve hectic fever, in such cases, had prolonged, positively, the lives of consumptives, even if the hectic were controlled by them, which was again doubtful.

If these views, stated tentatively, were correct, it would seem within the range of possibility to forestall the phenomena of fever by injecting nutritive fluids into the veins. Should our manufacturing chemists, who have of late produced so many organic compounds artificially, learn to manufacture a good imitation of *chyle*, and should the ingenuity of our surgeons provide an easy and harmless method of venous infusion, by constructing a sort of artificial *thoracic duct*, to be placed in a vein of the arm, we might then, perhaps, introduce a proper quantity of nutritive pabulum into the blood, two or three times a day, to prevent fever waste and fever heat, and still maintain the functions of the central nervous system. Dr. F. B. Harrington had recently (as we have seen in the journals) introduced on two several occasions, respectively, ℥xxx and ℥xxxvi of a saline solution into the median cephalic vein of a woman almost dead from hæmorrhage, with a favorable result. Why could not an artificial chyle be infused in the same manner?

Dr. King further remarked that the term "disease" embraced so wide a field, and such a vast variety of pathological phenomena, that it would be impossible to present the subject intelligibly and satisfactorily without an entirely new classification of morbid processes and the employment of many new terms. With relation to the want of conservatism in malignant growths, this might be explained by their not being under nervous control. In uterine cancer, for example, after the climacteric, and when it is natural for reproduction and sexual function to cease, the nerves probably atrophy, or suspend for the most part their vaso-motor control, and thus the histological growth in the uterus becomes a histological riot, governed only by "mob law," and without any benign purpose. When the reproductive factory has stopped work, and its offices are empty, the nerve telegraph and telephone are, as it were, taken down, for the sake of economy, and after then any artificially produced growth grows like a fungous excrescence, each cell taking care of itself, without any regard for the laws that respect and protect the entire fabric of the body.

At the very beginning of a study of this sort it could hardly be expected that he, or any one else, should be able, all at once, to explain the conservative influence of many pathological processes of which, at present, we did not even know *positively* the *cause*, which last was the first thing to be learned in order that the utility of the results might be ascertained. All he could hope to accomplish was, to entice the minds of pathologists, students and clinicians into the direction of inquiring, in any case of disease, as to the designed purpose of the observed phenomena. We must ask ourselves: What is this organism trying to do? Why does it do so? What is the use of the changes of function and structure? Are they, or are they not, advisable, *under the circumstances that produce them*, to maintain life? In a word, we must study the *physiology of disease.*

Dr. Bermann said that the question of the conservatism of fever had been under discussion for many years, and that in some cases that was its acknowledged function. Dr. King had, however, left out all mention of the germ theory of disease, as in pneumonia, febris intermittens, etc. If we can take the ground that fever is an effort of the economy to oxidize the germ, well and good, and this appears to be the case in trichinosis, where, after several weeks of high temperature, the trichinæ become surrounded by a deposit of lime and are made harmless. He does not agree with Dr. King as to the value of the hectic fever in phthisis. In his opinion septic fever is the name for it. He also doubts the hypertrophy of the uterine nerves during pregnancy. This has never been proved either as regards size or number of nerves. If they did increase in either way he failed to see how innervation took place. Certainly there was never complete atrophy of them.

Dr. Reyburn said that Dr. King's subject was an interesting one and that he was not alone in his belief. Graves, Bennet and Chambers had all written on this subject. For instance, in pneumonia the fever seemed to he an effort of nature to remove the detritus from tissue waste, and that now it was the custom to feed our patients in fever. If we want to treat our patients on scientific principles it must be more on this line and less pill and physic giving. Fevers must not always be cut short. He thought it well in all societies to discuss these questions and to make our practice more on this basis.

Dr. King said that he was not prepared to explain the conservatism of disease in every case. He had been aware all along that the germ theory of disease would be a stumbling-block, but he hoped that eventually all would be satisfactorily explained. As for pneumonia, which Dr. Bermann had said was from a germ, he did not believe that this had been proved. At all events *he* was not ready to accept it. His assertion that the nerves of the uterus were hypertrophied during pregnancy was obtained from text-books by the best writers and not from his per-

sonal observation. He said he thought it rational to believe that there was hypertrophy of nerves in the hypertrophied muscle of the athlete, and he did not see why the same would not apply to the pregnant uterus.

DR. ACKER said that antipyrin, contrary to Dr. King's assertion that the hectic of phthisis could not be controlled, would bring the temperature of such cases down.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, July 19, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. D. A. K. STEELE read a paper on

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL TUMORS.

(See page 173.)

DR. CHRISTIAN FENGER agreed with Dr. Steele that gonorrhœa in itself has nothing to do with tuberculosis; that it will not cause local tuberculosis of the epididymis any more than a trauma will cause local tuberculosis anywhere else in the body. When there is tuberculosis in the body somewhere, and consequently tubercle-bacilli in the current of the blood, then it may be that the local inflammation from gonorrhœal epididymitis, just as extravasation of the blood from a trauma, favors the accumulation of tubercle-bacilli in those places. Occasionally local tuberculosis will commence in an inflamed epididymis, but in a large number of these cases of scrotal tuberculosis there has really been no gonorrhœic epididymitis preceding.

DR. W. T. BELFIELD thought that too much stress had been laid upon the history as a means of differential diagnosis between syphilitic and other enlargements of the testicle; when affirmative, the history is a valuable factor; when negative, the diagnosis must be made without regard to the history. He mentioned a case where there was not only no history of syphilis, but also a nodular enlargement of the epididymis with but slight increase in the size of the testis—features usually characteristic of tuberculosis; yet the patient's age (31) argued so strongly against tuberculosis that it was determined to try syphilitic remedies before proposing excision; the effect was immediate and complete. Primary tuberculosis of the genital organs is evidently an infection from within—hæmatogenous. The idea of local infection through intercourse with a subject of uterine or ovarian tuberculosis is of course fanciful; indeed, very many of these patients are boys just beyond puberty who rarely have had intercourse. The growth of the tubercle bacilli implies some local or general predisposition of the individual; one factor in this predisposition is evidently found in the conditions developed during the rapid growth of a part. Thus in childhood the epiphyses of long bones frequently afford a nidus for the growth of the parasite, while the rudimentary sexual organs are never affected primarily; but when with puberty the genital organs begin a rapid development, they are especially prone to become the site of the infection.

The tuberculous testicle should be excised, provided the prostate and seminal vesicles are apparently healthy, to remove the chances of further infection. While it is of course possible that there may be other and undiscovered foci of infection in various parts of the body—lymphatic glands, lungs or elsewhere—yet castration not only removes one, perhaps the only tuberculous nidus, but especially diminishes the danger of infection of the prostate and seminal vesicles—a necessarily fatal as well as agonizing affection; tuberculosis of the lungs is sometimes arrested by proper climatic and hygienic conditions; but tuberculosis of the prostate never, so far as we know, by either hygienic, medical or surgical means.

DR. MCARTHUR had little to say in regard to the differential diagnosis. In regard to scrotal tumors there was a point upon which he would like to have light, viz.: whether Dr. Fenger would have the Society believe that tubercular testis is always the result of general tuberculosis; that is, that the tubercular bacilli are brought in the blood to the point where the local inflammation occurs. He had privately asked Dr. Belfield if such were the case, what would be the advantage of an early removal? He had removed a testicle that happened to be a tubercular one. The man was 35 years of age, in apparently robust health, with no evidence of pulmonary or kidney affection. Dr. McArthur advised the removal of the testicle and performed the operation. On microscopic examination all the characteristics of tubercular testicle were found; within two months and a half the man died of acute tuberculosis.

DR. CHRISTIAN FENGER said that fifteen years ago nobody would have thought of extirpating a tuberculous testicle, because we knew that after the abscess has opened and discharged for a long time, such persons, if put under favorable circumstances, given cod-liver oil, sent to the seashore or country, will recover. So far as general tuberculosis resulting from a tuberculous testicle was concerned, only about 25 per cent. of the patients, he thought, would become subject to general tuberculosis. In cases where the miliary tubercles were limited to the testicle, and all other parts of the body not as yet invaded, extirpation should be performed. It is a legitimate operation now, but has only become so within the last five years. It of course has to be limited to cases where, so far as we can find out, the tubercle is local in the epididymis. If the tuberculosis has invaded the vas deferens, it is difficult to see what good extirpation of the testicle could do except as a mere local measure. Another point in tuberculosis of the testicle makes us desire if possible to eradicate the local tuberculosis and thereby perhaps prevent the tuberculosis affecting the bladder. The patients are subject to most terrible suffering for a year or two before death when they get tuberculosis of the bladder. He did not think tuberculosis could be called local here except if it could be transmitted by cohabitation with a woman having tubercles of the uterus, much in the same way as the microbes of gonorrhœa are transferred, and this mode of infection is not proved as yet. The tubercles in the epididymis must origi-

nate in the same way as local tuberculosis in the bones, by arresting and accumulation of tubercle bacilli already preëxisting in the general circulation. He did not think it possible that, in the strict sense of the word, any of these tubercles could be called local.

Dr. G. C. Paoli did not claim to be a specialist, but had seen many tumors of the testicles and scrotum. Tumors of the scrotum often arise in connection with diseases of the prostate glands, and with strictures. He had seen tumors of the testicle produced by affections of these organs. Another thing that gives trouble in practice is neuralgia of the testicles, which is very difficult to diagnose because the only symptom we have is the severe pain in the testicle. Another kind of tumor which has not been mentioned is schirrous, and it is often difficult of diagnosis. Many that have been diagnosticated as schirrous have been nothing but chronic orchitis. He once saw a testicle extirpated in the belief that it was schirrous, but it proved to be a case of chronic inflammation of the testicle.

Dr. J. L. Gray read a paper on

THE TREATMENT OF EPILEPSY BY LIGATION OF THE VERTEBRAL ARTERIES,

first proposed by Dr. Brown, of Calcutta, in 1831. Vertebral arteries furnish blood supply of the medulla, pons, cerebellum and posterior third of cerebrum. Real seat of local disease in epilepsy supposed to be in the medulla, especially in the vaso-motor centres and regions related thereto, as convulsive centre described by Nothnagel. Is great irritability of these centres. Attacks of epilepsy due to reflex excitement of these centres. Ligate vertebral arteries and there will be less blood sent to these diseased and hypersensitive centres. Thus is lessened tendency to epileptic seizures. Also, as several branches of the sympathetic nerve must be necessarily ligated at the time the arteries are, this serves to lessen vaso-motor spasm in the medulla .Dr. Gray recommends tying the arteries between the atlas and axis. Operation been performed in Chicago seven times, with benefit in one case, temporary benefit in two, no benefit in two, fatal result in one, and result not known in remainder. Dr. Gray drew the following conclusions: 1. Ligation of vertebral arteries should take its place as a recognized procedure in cases of epilepsy in those cases where causes of attacks come from some region otuside of brain. 2. The artery should be tied as high up as possible and the ligature should include all fibres of the sympathetic nerve accompanying the vessel. 3. When side of brain first invaded by the disease can be determined, the artery of that side should be ligated, and if the lesion be bilateral both vertebral arteries should be ligated. The operation should be done not as a substitute but as an aid to other forms of treatment for the cure or relief of epilepsy.

Dr. D. R. Brower in opening the discussion thanked Dr. Gray for his very able paper so full of interest and scientific importance, and said the case which he reported to the State Medical Society two years ago is now not quite so favorable. Indeed, the child has practically relapsed into the same condition she was at the time of the operation. For two or three months the change for the better in the child's condition was very manifest. In that case the ligation was made at one side, the intention was to have both arteries ligated, but such symptoms of collapse came on that it was deemed unwise to pursue the operation further, and there being so little benefit, the parents refused to have another operation. He thought with Dr. Gray that enough is before us favorable to the operation to recommend it in cases where everything else fails, and he would be disposed to press the operation in those cases where there seems to be some special disorder of the circulation in the medulla. He thought the trouble about the treatment of epilepsy is that we have included under this name a great many diseases, he was sure there are a great many kinds of epilepsy, and he thought we do not know how to differentiate these different kinds, therefore our treatment must be to a great extent imperfect. There seem to to be cases of epilepsy that are confined to the medulla. The history of some cases led him to suppose that the medulla is the seat of the disease, and in such cases it seems that the operation might prove a benefit. He did not believe that the circulation is reëstablished through the circle of Willis nearly so rapidly as Dr. Gray would have us believe. The circle of Willis is made up of minute arteries. In this particular case, there was a manifest and profound impression made upon the area of distribution of the vertebral artery for weeks, and he did not believe the collateral circulation was speedily established. He had no doubt that this operation will do good in some cases, just as any other profound impression will if made upon the nervous system; the cutting and destruction of the connections through the various plexuses is beneficial, so is any extensive counter irritation. A seton added to other treatment that was only partially successful sometimes caused a wonderfully better result to follow. He had a case under observation in which the removal of a cicatrix has resulted in wonderful improvement in the patient's condition, whether due to the extensive counter irritation produced by the operation or removal of cicatrix he did not know. He believed the operation justifiable in cases that resisted the ordinary treatment. He was an earnest advocate of the surgical treatment of epilepsy, the best results he had seen in this disease having followed the use of the surgeon's knife. Quite a number of cases had come under his observation in which the cause of the affection seemed to be in the ovarian region, and surgical interference was followed by better results than from treatment by medicine. He thought the treatment of epilepsy by pills and powders one of the most unsatisfactory things that can be undertaken, and the proportion of cases benefited by drugs exceedingly small.

Dr. Christian Fenger asked as to Alexander's operation, whether he ligated at once on both sides. The first time Dr. Fenger ligated an artery the question presented itself if it would not be dangerous to ligate them both at the same time. He ligated the arteries at Dr. Jewell's request and consequently did not take responsibility for ligating both at once.

That question of course presents itself, and is truly interesting to see that the double simultaneous ligation of the vertebral arteries has never given rise to local brain symptoms. On the other hand, when we ligate a common carotid in case of epilepsy, we always have in mind the danger which may exist of emolition, from local cerebral enemia, and possibly death in a certain number of cases. The operation on the vertebral arteries is far preferable to the ligation of the carotid, if it should prove that there is no danger by the ligature of the vessels both at one time. As to the manner of operating: Alexander operated down low before the artery enters the vertebral canal, but according to Dr. Jewell's view it is necessary to ligate the vertebral arteries high up. I looked over the books of surgery and found that the method of ligating between the occiput and the atlas, and between the latter and the epistrofous, had been done on the cadaver, but not on living subjects. The reason why the vertebral artery had been ligated in former times was either for aneurism or wounds. There are very few instances on record, and the wounds and aneurisms were very dangerous cases, and Fischer in the German surgery of Billroth and Lurcke, published in 1880, said that the ligature of the vertebral artery between the occiput and atlas and between the atlas and the axis is practically impossible. On the cadaver it can be done as well between the occiput and atlas as the atlas and axis, but the operation is much easier between the atlas and axis. To ligate between the occiput and the atlas I consider almost practically impossible on the living subject. The ligature between the atlas and the axis can be done; I know that Andrews ligated there, but the cases on record are few. There has not as yet been any injury to the artery, but if we should tear the artery so that we could not get hold of vessel enough to ligate above and below, we would have much the same condition as in a traumatic aneurism of the artery. Warren, of Boston, who wrote his Memoirs of Surgery twenty years ago, gives one case of wounded artery that got well by compression, by filling up the wound, but in most cases we know how little effective the plugging of an arterial wound is. Of thirty-four wounds of the vertebral artery only five recovered. Four of these were treated by plugging or local applications; in one only the ligature between occiput and atlas was performed by me in 1881, and the case published in *Gaillard's Journal*, July, 1882. Dr. Fenger was afraid when taking up the vertebral artery of the possibility of wounding it before it is ligated.

DR. C. W. PURDY asked Dr. Gray whether the operation was followed by diabetes, as would be expected from an operation of that kind. It was pointed out in 1849 by Claude Bernard, that traumatic injuries to this tract of the brain gives rise to diabetes in numerous instances, and since that time the course of the diabetic influence has been pretty satisfactorily mapped out. It is said to leave the brain by vaso-motor filaments with the vertebral arteries going as far as the third cervical ganglion, passing along with and surrounding the subclavian arteries, and reaching the upper and middle dorsal. A section of these nerves at any place until we reach the upper dorsal ganglion causes diabetes. Strange to say, section of the splanchnics does not cause diabetes, but he would expect to find traumatic diabetes as a result of this operation. He thought that diabetes as a result of the operation would be only temporary.

DR. HAROLD N. MOYER thanked Dr. Gray for the manner in which he had presented the subject and especially for the indications which he laid down for the operation. Dr. Moyer had uniformly bad results from the treatment of epilepsy by any operative proceedure. He had never recommended an operation for trephining that was followed by good results. He had once recommended the removal of the ovaries, and it was done, but was not followed by a good result. In one case coming under his observation a man was trephined three times; the first time it was followed by a cessation of the epilepsy for eighteen months; the second, for a year; the last, by no cessation. He had found medication quite as bad; he had tried the bromides according to Hammond's method, without good results. During the last two years he had treated about one hundred cases of epilepsy and in only one case had there been any real benefit. He thought he should recommend this operation, and hoped it might not be as serious as one would be led to suppose from the deep seat of the artery, and the extensive destruction of tissue that must be made to reach it.

DR. D. R. BROWER said that at the discussion which followed his paper at Springfield, a gentleman present announced that this operation was first performed in this country sixty years ago by an army surgeon, stationed in St. Louis, upon a negro man who was his servant. The man recovered, but the case was never published. If this is so, an American surgeon was the first to essay the operation.

DR. J. L. GRAY in closing the discussion said that he had not had an opportunity, except in one case, to examine the urine, and in that there was a slight quantity of sugar for about a week. From all the literature he was able to examine the first operation was performed in 1831 by Dr. Brown.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Forty-Seventh Regular Meeting, Friday Evening, May 28, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

TAIT ON ABDOMINAL SECTION FOR PELVIC ABSCESS.

The Secretary, Dr. Edward Warren Sawyer, read the following letter from MR. LAWSON TAIT:

My Dear Dr. Nelson:—If not too late, I should like to take part in the discussion which was entered into at the Gynæcological Society of your city upon "Abdominal Section for Pelvic Abscess." My remarks, of course, are discursive and not very conclusive, because they are based upon only a very few points to which I want to draw attention.

The first is this: I object to the use of words ending in *otomy*, to mean various operations all of which are practically identical in character but different in detail, and not one of which can have any exclusive or absolute identification by any particular name. Thus Professor Christian Fenger, in the discussion, objects to the word laparotomy, and he introduces another which is perfectly new to me, and I hope it will never be used again: it is *oncotomy*. Dr. Fenger objects to laparotomy in a sense where I certainly have no objections, and his very objections only show how utterly absurd all these words are. There really ought not to be any such word as laparotomy in existence, because the signification of its derivatives in the use of the people who spoke the language is such that it could not by any human ingenuity be applied to any modern surgical proceeding. Now the words "abdominal section" are sufficiently English to be understood by everybody, and they are sufficiently distinctive to enable us to understand at once that when they are used the peritoneum is opened. I therefore wish through your powerful society to protest against the use of all these stupid words of Greek formation. I wish also to protest against the absurd distinctions drawn by Sanger which are quoted by Dr. Fenger on the subject of pelvic abscess.

He distinguishes six kinds of salpingitis.

1. *Septic*, the existence of which I entirely dispute as a specific ailment.

2. *Tuberculous*, which again I deny except that it has an existence as the third and contracting stage of pyosalpinx.

3. *Syphilitic*, not one particle of evidence of this have I ever seen.

4. *Actino-Mycotic*, which is an equally ridiculous subdivision, based on mere theory, not on fact.

5. *Gonorrhœal*, to which a great bulk of the cases belong.

6. *A mixed form.* Instead of this sixth or mixed form, I would say that there are a great many cases to which we cannot attribute any actual origin, a number of cases occurring in virgins where the existence of gonorrhœa would be an impossibility, and where there was no puerperal mischief.

Dr. Fenger's paper has always seemed to me to be an illustration of the German savant evolving the descriptions of the camel out of his own consciousness. My descriptions, on the other hand, are taken from some hundreds of cases upon which I have performed operations and the history of which I know as completely as it is possible to obtain information.

In Dr. Reeves Jackson's paper there are two points to which I want specially to draw attention, and they are not of much importance because they are chiefly questions personal to myself.

The first is a passage in which it is said: "Lawson Tait, of Birmingham, and Martin, of Berlin, were the first who attempted to prevent the terrible contingencies of pelvic inflammations by attacking the disease at its original seat. Lawson Tait removed the suppurating uterine appendages, Martin operated for suppurating periuterine hæmatocele. Tait operated for a suppurating hæmatoma of the right Fallopian tube in 1878, and he removed both tubes for pyosalpinx, and an ovary for abscess in 1885. In 1885 Martin performed laparotomy in three cases of intraperitoneal hæmatoma, namely, retrouterine hæmatocele." Now accuracy of date in a matter of this kind is rather important for one's own personal reputation, and Professor Reeves Jackson has underestimated my claim for priority by at least seven years. The first operation which I performed for suppuration of the uterine appendages was done on the 11th of February, 1872, and there will be found in the last edition of my book on "Diseases of the Ovaries," twenty-two cases which I had performed up to the middle of August, 1882, without a death. Since then I have operated upon hundreds. The first case of suppurating hæmatocele which I operated upon is published in detail in the same book; it was in February, 1879, and since then I have operated upon thirty-two cases without a death, and all have been completely cured. It will thus be seen that in none of these matters have the German surgeons approached English surgery as rivals in priority. They have been mere followers in every particular, and I regret to say their following has been practiced without that recognition to which our priority gives us every just claim.

The second point is that in which I find Professor Byford speaking in terms of my own work which no words of mine can sufficiently recognize or express my appreciation of, and here certainly his words of caution are worthy of a little note. What I fear, in fact what I already feel, is that the remarkable success which I have had, and of which Professor Byford speaks in such strong terms, is really leading astray those whose opportunities have not been as my own, into the belief that the work is easy, simple, easily acquired and free from risk. It is not so, and unless those who practice it choose to follow me in the rigid precautions and immense care which I give, not only to the mere performance of the operation, but to the surroundings of my patients and to every detail in connection with them, they will not obtain, they must not expect, the success which I have had. I have said that I fear, in fact, I already feel, that this success of mine is leading people astray, and I want to urge in the name of humanity, as well as for the sake of the art we practice, that there should be less of the indiscriminate rushing into this kind of work which has already been deplored on both sides of the Atlantic. I am, etc., LAWSON TAIT.

7, The Crescent, Birmingham, April 14, 1886.

DR. A. REEVES JACKSON said: We ought, I am sure, to feel honored by having among us in spirit, if not in person, so eminent a man as the writer of this letter. Lawson Tait is in some respects the greatest living surgeon, a Gamaliel at whose feet we all find ourselves sitting; and, withal, a man so observant that not a single gynæcological sparrow falls in any part of the world unnoticed by him. I must plead "not guilty" to the charge—made against me by Mr. Tait—of inaccuracy regarding the date of his first laparotomy for pelvic abscess—the remarks upon this point having been made by another, and not by me. As stated in the letter, his first operation of

this nature was done February 11, 1872, at Birmingham, on a patient of Mr. Hallwright. I am sure that Mr. Tait will not for a moment suppose that any of us would willingly do injustice to one whom we all esteem so highly, and from whom many of us have been recipients of acts of kindness and courtesy.

In regard to the justice of Mr. Tait's criticism on the prevalent use of the words ending in "otomy" I do not feel like being an arbiter. Technical words are frequently necessary, and yet, as a general rule, I think it preferable to use simple language. The ordinary English words are commonly sufficient to answer all the purposes of language. Besides, large and unusual words are sometimes embarrassing. When, some weeks ago, Professor Fenger charged me with performing an "oncotomy" I was afraid that I had done something very dreadful, and the worse because I did it without knowing it. I felt very much as the fisherwoman did when Daniel O'Connell in response to her volley of ordinary, undecorated profanity called her a parallelogram. The fisherwoman did not know what to say, and I could not reply; we both had evidently lost the thread of the discussion. I am glad that Mr. Tait speaks so strongly in regard to the tendency now so frequently indulged in, to perform laparotomies, and that he is willing to correct to some extent by his words the mischief that has been done by his powerful and successful work. It seems that when some persons visit Mr. Tait and witness his success and simple but effective methods, they come back thinking life is a blank unless they can own and manage an abdominal hospital and spend the remainder of their days in the cheerful occupation of removing uteri and ovaries.

DR. CHRISTIAN FENGER said: The letter which Mr. Lawson Tait wrote to Dr. Nelson relates in a number of points to my paper on "Laparotomy for Periuterine Abscess," as well as to some remarks which I made before the Society in a previous discussion. I must, therefore, beg the Fellows of the Society to bear with me if I take up a little of their time in answering Mr. Tait's letter.

Discussing Professor A. Reeves Jackson's paper, I objected to calling the operation in question a laparotomy. According to the Professor's description of the case, he had opened an abscess which was adherent to the anterior abdominal wall. He had consequently simply performed an oncotomy, an operation which, notwithstanding the division of the abdominal wall, does not differ materially from opening a deep-seated abscess in any other region of the body, as *ex. gr.* in an extremity.

Whether opening the abdominal or peritoneal cavity be termed laparotomy or abdominal section or *Bauch-Schnitt*, is of course a matter of indifference, provided only that the meaning of the word be agreed upon. There is but one way of getting at the signification of a medical term, and that is by learning in what sense the term is employed in the medical literature of the different nations.

I must again maintain that laparotomy is not merely section of the abdominal parietes, but that the word implies opening of the general peritoneal cavity with a view to perform some operation within that cavity. (*See Linhardt's Operationslehre.* Wien 1862, p. 705 and *Eulenburg, Realencyclopædie*, Bd. II, p. 37.) French authors occasionally use the word gastrotomy instead of laparotomy. Recently the operation has been called peritonotomy, which on account of its correctness should perhaps be preferred to the other terms.

It is of importance to distinguish between a laparotomy and the evacuation of a limited abscess by simply incising the abdominal wall. The two operations differ widely as to their consequent dangers. Where the general peritoneal cavity is opened, a well-known series of precautionary measures is required before and during the operation, in order to protect the patient from general septic peritonitis.

Where an incision through the abdominal parietes leads directly into a limited abscess-cavity, the precautionary measures essential to laparotomy may be dispensed with; the general peritoneal cavity is not opened and there is no fear of general peritonitis. In the latter operation the peritoneum is not seen or not taken notice of, the incision wound is left open and the limited cavity washed out and drained.

In every country medical authors hold these two operations apart. Opening a perityphlitic abscess, an adherent hepatic abscess or a perametritic abscess above Poupart's ligament is never spoken of as a laparotomy. Whenever we hear or read of a man having performed a series of laparotomies we naturally suppose that he is experienced in performing intraperitoneal operations. Now, many a surgeon has opened a large number of intraabdominal abscesses and has never seen the peritoneal cavity.

It is evidently important properly to limit the meaning of the term laparotomy; else we may misunderstand the description of a given case, and the statistics of laparotomies will necessarily be rendered valueless.

The next point Mr. Lawson Tait remarks upon is the question of priority of operating for pelvic hæmatocele. By the mistake of Mr. Tait, part of what I said in the discussion of Professor Jackson's paper is ascribed to the paper itself. I am thus quoted in his letter:

"Lawson Tait, of Birmingham, and Martin, of Berlin, were the first who attempted to prevent the terrible consequences of pelvic inflammations by attacking the disease at its original seat. Lawson Tait removed the suppurating uterine appendices; Martin operated for suppurating periuterine hæmatocele."

In the discussion I stated the dates at which Tait and Martin performed their respective operations. By a typographical error the dates appeared wrong in some of the copies of the transactions of the Society. 1885 instead of 1872 was given as the date of Tait's first laparotomy for abscess of the ovary, and 1885 instead of 1876 as that of Martin's first laparotomy for extraperitoneal hæmatocele.

Considering my remarks as a whole and examining my references to the literature on the subject a careful reader would not have failed to recognize in the wrongly printed dates a typographical error.

Lawson Tait performed his first laparotomy for

extraperitoneal hæmatocele in February 1879. (See Lawson Tait: *Diseases of the Ovaries. 4th Edition. London 1883, p. 346, and Tait's letter.)*

Martin performed the same operation for the first time in 1877, and a second time on the 31st of January, 1879. (See A. Martin: *Das extraperitoneale periuterine Hæmatom. Zeitschrift für Geburtshülfe und Gynekologie. VIII Bd. Hft. II, 1882, p. 476.)*

It will thus be seen that my statements concerning priority were correct. In the discussion of Professor Jackson's paper I quoted Sänger's classification of pelvic inflammations. In criticising it, Mr. Lawson Tait speaks of "absurd distinctions." I wish to repeat that I regard Sänger's classification as complete and correct and in accordance with the laws governing inflammatory processes in all organs of the body.

To Mr. Lawson Tait's manner of criticising my little paper "On Chronic Periuterine Abscess and its Treatment by Laparotomy," which appeared in the May number of the *Annals of Surgery*, 1885, there is but one answer. Like all published articles it is open to criticism. If anybody should wish to attack it, I am ready to enter into a discussion of it, provided that tangible objections to it be brought forward.

(*To be concluded.*)

INTERNATIONAL CONGRESS.

NINTH INTERNATIONAL MEDICAL CONGRESS TO BE HELD IN WASHINGTON, D.C., COMMENCING SEPT. 5, 1887.

CIRCULAR NO. 2.

The Ninth International Medical Congress will assemble in the City of Washington, the Capital of the United States, on Monday, September 5, 1887, at 12 o'clock noon, in accordance with the arrangements made at Copenhagen in August, 1884.

Patrons.—The President of the United States, the Hon. Grover Cleveland; the Secretary of State, the Hon. Thomas F. Bayard; the President of the Senate of the United States, the Hon. John Sherman; the Speaker of the House of Representatives of the United States, the Hon. John G. Carlisle.

PROPOSED OFFICERS OF THE CONGRESS.

President.—Nathan S. Davis, M.D., LL.D,, Professor of the Principles and Practice of Medicine and of Clinical Medicine, Chicago Medical College, and of Mercy Hospital, Chicago, Illinois.

Vice-Presidents, as far as appointed.—McCall Anderson, M.D., London, England; Mr. Thomas Annandale, Professor of Clinical Surgery, Edinburgh University, Edinburgh, Scotland; Professor Dujardin-Beaumetz, M.D., Paris, France; Cuthbert Hilton Golding-Bird, M.D., Professor of Physiology, Guy's Hospital, London, England; Professor Carl Braun, M.D., Vienna, Austria; William Brodie, M.D., Emeritus Professor of Principles and Practice of Medicine and Clinical Medicine, Detroit College of Medicine, Detroit, Michigan; W. W. Dawson, M.D., Professor of Surgery and Clinical Surgery, Medical College of Ohio, Cincinnati, Ohio; Thomas M. Dolan, M.D., Halifax, England; F. R. Frazer, M.D., Professor of Materia Medica and Therapeutics, University of Edinburgh, Edinburgh, Scotland; J. A. Grant, M.D., Ottawa, Canada; J. A. S. Grant, M.D., Cairo, Egypt; A. L. S. Gusserow, M.D., Professor of Obstetrics, Berlin, Prussia; Dr. Hans Ritter von Hebra, Vienna, Austria; Dr. E. Klein, London, England; M. Le Baron H. Larrey, Paris, France; Sir William MacCormac, Surgeon St. Thomas's Hospital, London, England; Mr. George B. MacLeod, Professor of Surgery, Glasgow, Scotland; John S. McGrew, M.D., Honolulu, Hawaiian Islands; E. M. Moore, LL.D., Rochester, New York; Professor von Monseil, Bonn, Prussia; Dr. Müller, Berlin, Prussia; William Murrell, M.D., London, England; Charles D. F. Phillips, M.D., M.R.C.S., late lecturer on Materia Medica and Therapeutics, Westminster Hospital, London, England; Richard Quain, M.D., Professor of Anatomy, London, England; Tobias G. Richardson, M.D., Professor of General and Clinical Surgery Medical Department Tulane University, New Orleans, Louisiana; M. P. Ricord, Paris, France; Professor John Burdon-Sanderson, M.D., London, England; Lewis A. Sayre, M.D., Professor of Orthopædic and Clinical Surgery, Bellevue Hospital Medical College, New York; Dr. Mariano Semmola, Professor of Experimental Therapeutics, University of Naples, Italy; Dr. Leopold Servais, Antwerp, Belgium; J. M. Toner, M.D., Washington, D.C.; Dr. P. G. Unna, Hamburgh, Germany; Professor F. Winckel, Dresden, Saxony; the President of the American Medical Association; the Surgeon-General of the United States Army; the Surgeon-General of the United States Navy.

Secretary-General.—John B. Hamilton, M.D., Supervising Surgeon-General of the United States Marine Hospital Service; Professor of Surgery, Georgetown University, D. C.; Professor of Surgery, Chicago Policlinic.

Treasurer.—E. S. F. Arnold, M.D., M.R.C.S., Newport, Rhode Island.

Chairman of the Finance Committee.—Richard J. Dunglison, M.D., Philadelphia, Pennsylvania.

Chairman of the Executive Committee.—Henry H. Smith, M.D., LL.D., Emeritus Professor of Surgery in the University of Pennsylvania, Philadelphia, Pennsylvania.

Chairman of the Committee of Arrangements.—A. Y. P. Garnett, M.D., Emeritus Professor of Clinical Medicine, Columbia University, Washington, D.C.

Associate Secretaries of the Congress.—William B. Atkinson, M.D., Philadelphia, Pennsylvania; G. B. Harrison, M.D., Washington, D.C.

The Congress will consist of such members of the Regular Medical Profession as shall have registered and taken out their ticket of admission, and of such other Scientific men as the Executive Committee of the Congress shall deem it desirable to admit. The books for the Registration of Members will be open from 9 A.M. to 5 P.M. on Thursday, September 1, 1887, and on each subsequent day during the Session, under the charge of the "*Reception Committee.*" Any member desiring to anticipate this Registration, can apply by letter to the Secretary-General and forward

his dues, with his address in full, when a receipt will be returned.

The dues of Membership for residents of the United States will be Ten dollars ($10). There will be no dues for members residing in other countries. Each member will be entitled to receive a copy of the "*Transactions*" of the Congress, when published by the Executive Committee.

The General Sessions of the Congress will be devoted to the transaction of business and Addresses and communications of general scientific interest, by members appointed by the Executive Committee. A printed "Programme" of the Sessions will be presented to each member on registering. A printed "Order of Business" for each day will also be issued.

The work of the various Sections will be directed by the President of the Section, and the order will be published in a daily Programme for each Section. Questions and topics that have been agreed on for discussion in the Sections shall be introduced by members previously designated by the titular officers of each Section. Members who have been appointed to open discussions shall present to the Secretaries of the Section, in advance, statements of the conclusions which they have formed as a basis for the debate.

Brief abstracts of Papers to be read in the Sections shall be forwarded to the Secretaries of the proper Section on or before *April 30, 1887*. These abstracts shall be treated as confidential communications, and shall not be published before the meeting of the Congress. Papers relating to topics not included in the list of subjects proposed by the Officers of the Sections, may be accepted after April 30, 1887, and any member wishing to introduce a topic not on the regular list of subjects for discussion, shall give notice of the same to the Secretary General at least twenty-one days before the opening of the Congress. The titular officers of each Section shall decide as to the acceptance of such proposed communications, and the time for their presentation. No communitions shall be received which has been already published or read before a Society.

The official languages of the Congress shall be English, French and German. Each paper or address shall be printed in the "*Transactions*" in the language in which it was presented. Preliminary abstracts of papers and addresses shall also be printed in the language in which each is to be delivered. All discussions shall be printed in English.

The officers of the Congress and the officers of the Sections, including all Foreign officers, will be nominated to the Congress by the Executive Committee, at the opening of the first Session. A partial list of the officers to be nominated (except the members of Council of the different Sections, the list of whom is at present imperfect), is offered herewith.

The Executive Committee cordially invites members of the regular medical profession, and men eminent in the sciences collateral to medicine, in all countries, to participate, in person or by papers, in the work of this great humanitarian assembly. Communications relating to appointments for papers to be read in the Congress should be addressed to Dr. John B. Hamilton, Secretary-General of the Ninth International Medical Congress, Washington, District of Columbia. All questions or communications connected with the business of the Executive Committee should be addressed to Dr. Henry H. Smith, Chairman of the Executive Committee of the Ninth International Medical Congress, Philadelphia, Pennsylvania. Gentlemen named in any position in the Congress are requested to notify the Chairman of the Executive Committee, as soon as practicable, of any error in the name, title or address in this circular.

Ladies in attendance with members of the Congress, and those invited by the "Reception Committee," may attend the General Sessions of the Congress when introduced by a member. They will also be invited to attend the Social Receptions. The Executive Committee reserves the right to invite distinguished persons to any or all the meetings of the Congress. The attendance of Medical Students and others interested in the work of the various Sections or in the general addresses delivered in the Congress, will be permitted, on the recommendation of the Secretary-General or the officers of a Section, on their taking out from the Registration Committee a general ticket of admission, fee one dollar ($1); but such persons cannot take part in the proceedings.

All communications and questions relating to the special business of any Section, must be addressed to the President or one of the Secretaries of that Section. As many details of the Congress and numerous appointments of officers are yet to be completed, other Circulars will be issued from time to time, as circumstances may demand.

The following is the list, as at present completed:

EXECUTIVE COMMITTEE OF THE CONGRESS.

Henry M. Smith, M.D., LL.D., *Chairman;* N. S. Davis, M.D., LL.D.; John B. Hamilton, M.D.; E. S. F. Arnold, M.D.; Richard J. Dunglison, M.D., *Secretary;* Abram B. Arnold, M.D.; William T. Briggs, M.D.; De Laskie Miller, M.D., Ph.D.; James F. Harrison, M.D.; F. H. Terrill, M.D.; William H. Pancoast, M.D.; John H. Callender, M.D.; Alonzo B. Palmer, M.D., LL.D.; J. Lewis Smith, M.D.; E. Williams, M.D.; S. J. Jones, M.D., LL.D.; William H. Daly, M.D.; A. R. Robinson, M.D.; Joseph Jones, M.D.; Albert L. Gihon, M.D.; John P. Gray, M.D., LL.D.; Jonathan Taft, M.D.; Frederick S. Dennis, M.D.; A. Y. P. Garnett, M.D.

PRESIDENTS OF SECTIONS.

General Medicine.—Abram B. Arnold, M.D., Professor of Clinical Medicine, College of Physicians and Surgeons, Baltimore, Md.

General Surgery.—William T. Briggs, M.D., Professor of Surgery, University of Nashville, Nashville, Tenn.

Military and Naval Surgery and Medicine.—Henry H. Smith, M.D., LL. D., Emeritus Professor of Surgery, University of Pennsylvania, and formerly Surgeon-General of Pennsylvania, Philadelphia, Pa.

Obstetrics.—DeLaskie Miller, M.D., Ph. D., Professor of Obstetrics, Rush Medical College, Chicago, Ill.

Gynæcology.—James F. Harrison, M.D., Professor of Obstetrics, etc., University of Virginia, Va.

Therapeutics and Materia Medica.—F. H. Terrill, M.D., Professor of Therapeutics, University of California, San Francisco, Cal.

Anatomy.—William H. Pancoast, M.D., Professor of General, Descriptive and Surgical Anatomy, Medico-Chirurgical College, Philadelphia, Pa.

Physiology.—John H. Callender, M.D., Professor of Physiology and Psychology, University of Nashville, Nashville, Tenn.

Pathology.—Alonzo B. Palmer, M.D., LL. D., Professor of Pathology, University of Michigan, Ann Arbor, Mich.

Diseases of Children.—J. Lewis Smith, M.D., Professor of the Diseases of Children, Bellevue Hospital Medical College, New York, N. Y.

Ophthalmology.—E. Williams, M.D., Professor of Ophthalmology, Miami Medical College, Cincinnati, Ohio.

Otology.—S. J. Jones, M.D., LL.D., Professor of Ophthalmology and Otology, Chicago Medical College, Chicago, Ill.

Laryngology.—William H. Daly, M.D., Pittsburg, Pa.

Dermatology and Syphilis.—A. R. Robinson, M. D., Professor of Dermatology, New York Polyclinic, and of Histology and Pathological Anatomy, Woman's Medical College of the New York Infirmary, New York, N. Y.

Public and International Hygiene.—Joseph Jones, M.D., Professor of Chemistry and Clinical Medicine, Tulane University; Ex-President Board of Health, New Orleans, La.

Medical Climatology and Demography.—Albert L. Gihon, M.D., Medical Director, U. S. Navy.

Psychological Medicine and Nervous Diseases.—John P. Gray, M.D., LL.D., Professor of Psychological Medicine and Medical Jurisprudence, Bellevue Hospital Medical College, Utica, N. Y.

Dental and Oral Surgery.—Jonathan Taft, M.D., Professor of Dental and Oral Surgery, University of Michigan, Ann Arbor, Mich., Cincinnati, Ohio.

VICE-PRESIDENTS OF SECTIONS.

General Medicine.—W. W. Cleaver, M.D., Kentucky; J. A. Octerloney, M.D., Kentucky; P. G. Robinson, M.D., Missouri; Thos. F. Rochester, M.D., New York; Preston B. Scott, M.D., Kentucky.

General Surgery.—Professor Filanus, Holland; Moses Gunn, M.D., Illinois; J. W. Hamilton, M. D., Ohio; W. H. Hingston, M.D., Canada; James M. Holloway, M.D., Kentucky; J. C. Hutchison, M.D., New York; N. S. Lincoln, M.D., District of Columbia; Donald MacLean, M.D., Michigan; Donald Macrea, M.D., Iowa; M. Storrs, M.D., Connecticut.

Military and Naval Surgery and Medicine.—C. J. Cleborne, M.D., United States Navy; E. H. Gregory, M.D., Missouri; Frank H. Hamilton, M.D., New York; W. T. Hord, M.D., United States Navy; Frederick Hyde, M.D., New York; G. L. Porter, M.D., Connecticut; Wm. E. Taylor, M.D., United States Navy; Edward Warren-Bey, M.D., France; B. A. Watson, M.D., New Jersey.

Obstetrics.—Gustav Braun, M.D., Austria; P. Budin, M.D., France; J. Galabin, M.D., England; John Goodman, M.D., Kentucky; W. M. Knapp, M.D., Nebraska; R. Lowry Sibbet, M.D., Pennsylvania; Isaac E. Taylor, M.D., New York.

Gynæcology.—N. Bozeman, M.D., New York; Henry O. Marcy, M.D., Massachusetts; T. A. Reamy, M.D., Ohio; R. R. Storer, M.D., Rhode Island.

Therapeutics and Materia Medica.—Henry M. Field, M.D., New Hampshire; Albert Frické, M.D., Pennsylvania; George Gray, M.D, Ireland.

Anatomy.—C. W. Kelly, M.D., Kentucky; Samuel Logan, M.D., Louisiana.

Physiology.—

Pathology.—Andrew Fleming, M.D., Pennsylvania; J. B. Johnson, M.D., Missouri; Henry F. Lyster, M.D., Mich.

Diseases of Children.—William B. Atkinson, M.D., Pennsylvania; William G. Booker, M.D, Maryland; William H. Day, M.D., England; Dr. Cadet de Gassicourt, France; Dr. J. Grancher, France; Dr. Edward Henoch, Prussia; Adoniram B. Judson, M. D., New York; J. P. Oliver, M.D., Massachusetts; Eustace Smith, M.D., England; Charles West, M. D., England; Joseph E. Winters, M.D., New York.

Ophthalmology.—A. W. Calhoun, M.D., Georgia; J. J. Chisholm, M.D., Maryland; P. D. Keyser, M. D., Pennsylvania; Dudley S. Reynolds, M.D., Ky.

Otology.—

Laryngology.—M. F. Coomes, M.D., Kentucky; J. H. Hartman, M.D., Maryland; J. O. Roe, M.D., New York; E. L. Shurley, M.D., Michigan; G. V. Woolen, M.D., Indiana.

Dermatology and Syphilis.—James M. Keller, M. D., Arkansas; John V. Shoemaker, M.D., Pennsylvania; George Thin, M.D., London, England.

Public and International Hygiene.—A. Nelson Bell, M.D., New York; John Berrien Lindsley, M. D., Tennessee; J. N. McCormack, M.D., Kentucky; J. F. Y. Paine, M.D., Galveston, Texas; Benjamin W. Richardson, M.D., England; John Simon, M.D., England; J. W. Thudicum, M.D., England.

Medical Climatology and Demography.—Dr. A. Chervin, Paris, France; Traill Green, M.D., Pennsylvania; John H. Hollister, M.D., Illinois.

Psychological Medicine.—Julius Althaus, M.D., England; R. H. Chase, M.D., Pennsylvania; Eugene Grissom, M.D., North Carolina; John C. Hall, M.D., Pennsylvania; P. A. Hooper, M.D., Arkansas; J. S. Jewell, M.D., Illinois; S. S. Schultz, M.D. Pennsylvania.

Dental and Oral Surgery.—W. W. Allport, M.D, Illinois; S. W. Dennis, M.D., California; C. L. Ford, M.D., Michigan; H. L. McKellops, M.D., Missouri; A. T. Metcalf, M.D., Michigan; W. H. Morgan, M.D., Tennessee; A. L. Northrop, M.D., New York; L. D. Shepard, M.D., Massachusetts.

SECRETARIES.

General Medicine.—J. W. Chambers, M.D., Baltimore, Maryland.

General Surgery.—Dudley P. Allen, M.D., Cleveland, Ohio; Carl Mayde, M.D., Germany; J. R. Weist, M.D., Richmond, Ind.; A. H. Wilson, M.D., South Boston, Mass.

Military and Naval Surgery and Medicine.—J. McF. Gaston, M.D., Atlanta, Georgia; E. A. Wood, M.D., Pittsburg, Pa.

Obstetrics.—A. Charpentier, M.D., Paris, France; T. Felsenreich, M.D., Vienna, Austria; W. W. Jaggard, M.D., Chicago Ill.; John Williams, M.D., London, Enland.

Gynæcology—Earnest W. Cushing, M.D., Boston, Mass.

Therapeutics.—Frank Woodbury, M.D., Philadelphia, Pa.

Anatomy.—Henry Morris, M.D., Philadelphia, Pa.

Physiology.—R. W. Bishop, M.D., Chicago, Ill.

Pathology.—H. M. Biggs, M.D., New York, N.Y.; I. N. Himes, M.D., Cleveland, Ohio.

Diseases of Children.—Dillon Brown, M.D., New York.

Ophthalmology—S. C. Ayres, M.D., Cincinnati, Ohio.

Otology.—S. O. Richey, M.D., Washington, D.C.

Laryngology.—William Porter, M.D., St. Louis, Missouri.

Dermatology.—W. T. Corlett, M.D., Cleveland, Ohio; F. E. Daniel, M.D., Austin, Tex.

Public and International Hygiene.—George H. Rohé, M.D., Baltimore, Md.; Walter Wyman, M.D., U. S. Marine Hospital Service, New York, N. Y.

Climatology and Demography.—Charles Denison, M.D., Denver, Colorado; James F. Todd, M.D., Chicago, Illinois.

Psychological Medicine.—E. D. Ferguson, M.D., Troy, N. Y.; E. Landolt, M.D., (Berlin, Prussia), Paris, France.

Dental and Oral Surgery.—Edward A. Bogue, M.D., New York, N. Y.; S. F. Rehwinkle, M.D., Chillicothe, Ohio.

COMMITTEE OF ARRANGEMENTS, WASHINGTON, D. C.

A. Y. P. Garnett, M.D., Chairman; J. M. Toner, M.D., Vice-Chairman; C. H. A. Kleinschmidt, M.D., Secretary; D. C. Patterson, M.D., Treasurer.

Executive Committee.—Drs. A. Y. P. Garnett, J. M. Toner, N. S. Lincoln, C. H. A. Kleinschmidt, Surgeon-General F. M. Gunnell, M.D., U. S. Navy; Surgeon-General Robert Murray, M.D., U. S. Army; Supervising Surgeon-General J. B. Hamilton, M.D., U. S. Marine Hospital Service; Chief Medical Purveyor J. H. Baxter, M.D., U. S. Army.

Committee on Congressional Legislation.—Dr. A. Y. P. Garnett, Chairman.

Committee on Finance—Dr. G. L. Magruder, Chairman.

Committee on Printing.—Dr. J. B. Hamilton, Chairman.

Committee on Reception.—Dr. J. M. Toner, Chairman.

Committee on Entertainments.—Dr. N. S. Lincoln, Chairman.

Committee on Transportation.—Dr. J. W. H. Lovejoy, Chairman.

Committee on Place of Meeting for Congress and Sections—Dr. D. C. Patterson, Chairman.

By order of the Executive Committee of the Congress.

HENRY H. SMITH, M.D., Chairman.

RICHARD J. DUNGLISON, M.D., Secretary.

[Our exchanges are earnestly requested to copy this circular.]

TO THE PRESIDENT OF THE CONGRESS:

Dear Sir:—In accordance with the request of Dr. Joseph Jones, of New Orleans, La., President of the XIVth Section of the Ninth International Medical Congress, I will investigate the important questions embraced under Section VI of the Inquiries prepared for the Council of this Section by Dr. Jones. In order to throw light upon these important questions, I have upon consultation with the President of the XIVth Section, drawn up the following questions, relating chiefly to the effects of overflows and rice-culture upon the Public Health; and in order to obtain reliable information I address the following interrogations to the medical men in those localities, and respectfully request, as early as possible, a full and specific answer to each question.

Question 1. How long have you been cognizant of the results of overflows of the Mississippi river and its tributaries upon the Public Health?

2. Have you closely observed the effects of said overflows upon the Public Health?

3. Have you generally or uniformly observed an increase of sickness immediately succeeding these overflows?

4. If so, what diseases? Their character and type?

5. What local or general conditions (including topography) have you noted, controlling or modifying the effects of overflows upon the Public Health?

6. Have you kept statistics of the number and dates of these overflows, and the cases of sickness (if any) resulting therefrom? If so please give these statistics.

7. What is your experience of the effects of rice-culture upon the Public Health? and what the rate of death per 1000 population before and since the commencement of rice-culture?

8. Has malarial hæmaturia increased in frequency and severity during the past forty years? And is said increase due to the increased cultivation of rice in the Delta of the Mississippi river, or in other localities where rice is cultivated?

9. What effect has the camping and working of State prisoners in the low lands and swamps had upon said prisoners, held by Louisiana, Arkansas, Mississippi or other States so employing their prisoners.

10. How many deaths have been caused among State prisoners by malarial diseases, directly traceable to exposure to the malaria of the swamps?

11. Give facts bearing upon the relative effects of overflows and rice-culture upon the colored and white races?

12. Relations of drinking water to the *health* of the inhabitants of rice, sugar, and cotton plantations? Effects of swamp water? effects of cistern, well and spring water, for drinking purposes?

13. The best means of protecting the health of the laborers and inhabitants in such localities?

The physicians of the valley of the Mississippi river and the rice regions of Arkansas, of Alabama, Georgia, North and South Carolina, Florida and Texas, are earnestly requested to furnish their replies to RICHARD H. DAY, M.D.,
Baton Rouge, La. P. O. Box 181.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

THE INTERNATIONAL MEDICAL CONGRESS.—Our latest information is to the effect that the arrangements for the great International Congress at Washington are progressing favorably. In the case of many of our European brethren the occasion of a visit to the United States will be a unique one in their lives. We have not yet reached that familiarity with the Atlantic which is such an attainment in our American brothers:

> Qui siccis oculis monstra natantia,
> Qui vidit mare turgidum.

Nevertheless, many on this side are anxious to return the visits so generously made from the other. And whatever the discomforts of the voyage or the severity of the *mal de mer*, we are likely to have the advantage of much brotherly assistance and advice. It may mark a new era in the treatment of sea-sickness, when so many zealous physicians and surgeons are set in competition for their own relief. Be this as it may, great preparations are being made in Washington and elsewhere, and it only remains for Europe to see that the guests are forthcoming. It is the great element in all such gatherings that they be well "furnished with guests," and we would now urge on the profession and its leaders that they will do a great service by an early decision to attend, and still more by an early intimation of it to those concerned. There are American physicians who have visited England annually for thirty or forty years, and on rare occasions perhaps more than once in the year. The late Dr. Flint, whose absence will be acutely felt at Brighton this year and at Washington next, had come of late years to think nothing so refreshing as a run to the old home of his forefathers. Let us reciprocate the compliment on this high occasion, and make the very Atlantic the measure of our desire to cultivate international science and friendship—*Lancet*, July 24, 1886.

GLANDERS IN MAN has been heretofore considered a wellnigh incurable disease. The *Sanitary News* states that Dr. C. N. Cooper, county physician of Kane county, Ill., reports the recovery of a case which has been of two years' duration. A man died from the disease near Elgin and his wife contracted the disease from him. She has, after much suffering, so far recovered as to be able to support herself.

TYROTOXICON IN ICE-CREAM.—Prof. Victor C. Vaughan has discovered tyrotoxicon, or cheese poison, in some ice-cream which recently caused serious trouble in Michigan. The poison has thus been found in cheese, curd, and in ice-cream.

PROFESSOR KAPOSI will take the editorship of the *Archiv für Dermatologie und Syphilis*, made vacant by the death of Prof. Auspitz. Prof. Pick, of Prague, will remain co-editor.

CAN A MAN HAVE A FEMALE COMPLAINT?—A young man entered the Dispensary of the Chicago Policlinic recently, and going up to the clerk held out one of the Dispensary circulars with the question: "Say! isn't this the hour for diseases of women?" The clerk answered in the affirmative, when the young man said: "Well! I've got a disease of a woman and want to be treated."

CAVOUR AND BISMARCK ON STATE MEDICINE.—A little volume of some seven hundred pages, entitled "La Sapienza Politica del Cavour e del Bismarck," has just appeared, says *The Lancet*, under the competent editorship of SIGNOR FILIPPO MARIOTTI, the well-known Italian publicist and man of letters. Though primarily designed for the student of politics, the book has a great deal to interest the professional man, and not least the votary of the healing art, dealing as it does with the relations of hygiene to the State, with the right of Government to interfere in professional education, in the food and water supply of the community, and in the complex social questions which are brought home to the busy practitioner every day of his life. Signor Mariotti, remembering the saying of Bossuet, "C'est la maxime qui fait les grands homes," has perused the many discourses of the great Italian and German statesmen with a vigilant eye to those passages in which years of special thought and experience are condensed and crystallized, so to speak, in pregnant apophthegms and memorable sayings; and the result is a volume of inductions and illustrations which cover the whole field of political and public life, and put the reader in possession of guiding principles which, in such crises as that we are now passing through, will be found as valuable as they are opportune. When the tumult and the din of an "appeal to the country" has subsided, and the

approach of autumn brings the weary professional man the holiday he has earned, we can imagine few pleasanter or more profitable *compagnons de voyage* than this compact little treasury of the wisdom and the wit of the two great masters of statecraft and "unifiers of empire." Be it remembered that in continental parliaments the physician and the surgeon are far more numerously represented than in our own, and that many of the discussions, of which this volume gives us the etherialized essence, were provoked or shaped by the interpellations of medical deputies. A Virchow in the German chamber, a Tommasi-Crudeli or a Moleschott in the Italian one, cannot fail to imprint their finely-trained intellects on the debates in which they take part, and it is one of the charms of Signor Mariotti's skilful compilation that not only does he make us hear Cavour and Bismarck at their best, but that he enables us to catch the echoes of far-reaching discussions to which the medical interlocutor has contributed the scientific thoroughness and the philosophic calm.—*Lancet*, July 17, 1886.

IMPORTED SMALL-POX.—The Brooklyn Board of Health has recently discovered fourteen cases of small-pox traceable to a Polish boy landed at Castle Garden three weeks before the discovery of the disease. It is said that there is a quarrel between the health officers on the lower St. Lawrence, and that quarantine is consequently in a very lax condition. It seems entirely probable that the States may have to quarantine against New York unless the officials in that State exercise more caution.

THE BRAIN OF GAMBETTA.—M. DUVAL (Director of the Laboratory of Anthropology) has recently given to the Society of Anthropology at Paris a detailed description of the external configuration of the brain of Gambetta. He draws special attention to the fact that the cortical structure in the neighborhood of Broca's convolution has become markedly augmented. Usually this part of the brain assumes the form of an M, the two vertical limbs or sulci enclosing a small valve-like portion in the shape of a V. In the brain of Gambetta, however, as has been noted in other cases as well, this V-shaped portion has become doubled on itself, and assumed the form of a W instead of a V. When we recall the fact that Broca, in his memoirs, attributes to this part of the cerebral cortex (left or right sided, according as the individual is right or left handed) the function of articulate language, the unusual development of this convolution in Gambetta and others confirms, to a certain extent, this opinion now generally accepted. Gambetta was a great orator, his memory for words being most remarkable. He had acquired a rapid and most exact method of expressing his ideas. It is, therefore, somewhat admissible to associate his great oratorical power with this increased growth of cortical tissue in the neighborhood of Broca's convolution.—*British Medical Journal*, July 31, 1886.

HOW TO INTRODUCE DISEASE.—The *Sanitary News* says: Importers of rags and paper stock feel that they have gained an important victory now that the Treasury Department has been induced to change its ruling as to the bringing in of foreign rags. The recent order of the department does away with the compulsory fumigation and disinfection, the expense of which has caused so much grumbling in the trade.

"The health officer of the port still has the right to insist upon disinfection whenever, in his judgment, it is advisable," said a rag importer of New York recently, "but we don't anticipate the trouble and expense we have had with every cargo of rags heretofore. We shall have other importers in other lines of trade on our side in many cases, and the health officer will have to fight not the rag importer alone. For instance, if a vessel arrives with an assorted cargo, a portion of which is rags, and the health officer orders the rags to be disinfected, the consignees of all the rest of the cargo will be put to trouble and expense by the detention of the ship and the disinfection."

"Suppose an entire cargo of rags comes here; what will you do?" asked the reporter.

"Oh, we can avoid disinfection all the same. If a ship loaded with rags comes here we can stop her at Sandy Hook and order her to some other port where there there is no disinfecting process provided, land the rags there, and then reship them overland to any place we want to."

A SANITARY convention will be held at Big Rapids, Michigan, on November 18 and 19, under the auspices of the State Board of Health.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 31, 1886, TO AUGUST 6, 1886.

Major Passmore Middleton, Surgeon, granted leave of absence until Sept. 10, 1886. (S. O. 100, Div. of the Atlantic, Aug. 3, 1886.)

Capt. R. H. White, Asst. Surgeon, ordered from Angel Island, Cal., to San Diego Bks., Cal., relieving Capt. Leonard Y. Loring, Asst. Surgeon. (S. O. 94, Dept. Cal., July 28, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 7, 1886.

Hutton, W. H. H., Surgeon, to proceed to Key West, Florida, for temporary duty. Aug. 7, 1886.

Bevan, A. D., Asst. Surgeon, ordered to examination for promotion. August, 1886.

Williams, L. L., Asst. Surgeon, when relieved at Buffalo, N. Y., to proceed to Mobile, Ala., for temporary duty. Aug. 2, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED AUGUST 7, 1886.

Rush, Chas. D., P. A. Surgeon, detached from the receiving ship "Franklin" and ordered to the U. S. S. "Pinta."

Willson, W. G. G., P. A. Surgeon, detached from the U. S. S. "Pinta," ordered home and wait orders.

CORRIGENDA.

In THE JOURNAL of August 7, p. 149, in Dr. H. T. Byford's article on the "Treatment of Retroversion of the Uterus" Cut 7 should be No. 9, 8 should be No. 7, and 9 should be 8.

In THE JOURNAL of July 31, p. 116, 1st column, 8th line from bottom, for "Thus 10 grains carb. of calomel and sulphate of quiniæ" read "Thus 10 grains each of calomel and sulphate of quinine."

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, AUGUST 21, 1886. No. 8.

ORIGINAL LECTURES.

SOME PRACTICAL HINTS UPON THE TECHNIQUE OF AN ASEPTIC SURGICAL OPERATION.

A Clinical Lecture Delivered in the Carnegie Laboratory,

BY FREDERIC S. DENNIS, M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE.

[Reported by DR. H. SEYMOUR HOUGHTON]

GENTLEMEN:—In finishing, this morning, the winter course of lectures upon the Principles and Practice of Surgery, I propose to give you some practical hints. These hints will have reference to the antiseptic precautions which should be observed in the performance of any surgical operation of great or small magnitude. If the principles upon which antiseptic surgery is based are true—and there is no doubt upon this point—it is necessary to observe the same care in opening an abscess as in opening a major joint or exposing the peritoneal cavity. You have doubtless been bewildered by all the suggestions which you have listened to from different surgeons in reference to the various methods of employing antiseptics. In my remarks to-day I shall confine myself to the different steps which should be observed in every surgical operation, if sepsis is to be avoided and primary intention is to be secured. I shall assume at the outset that you are all believers in antiseptic surgery, and that the ocular demonstration of the causes of decomposition and putrefaction, which you have seen here this session in the Carnegie Laboratory, have proved conclusively to your minds the truth of this great system of surgery.

At the beginning of the term you saw cultivations of the different micro-organisms upon Koch's sterilized jelly and other media. These micro-organisms were found in the air, in the water, and in the soil, and these same micro-organisms have been demonstrated to you to be the cause of putrefaction. You have seen in the clinics the beautiful results of surgical operations where means have been employed to prevent the access of these micro-organisms in wounds during an operation. You observe to-day that the infusions of beef in these test tubes, which were sealed last September, are as fresh this spring as they were last autumn. These pipette bulbs, which I exhibited to you in the autumn, are here again upon the table before me, and they remain unchanged. No decomposition has taken place in the infusion which I sealed in glass tubes last August in Prof. Tyndall's laboratory in London, under the direction of Mr. Cottrell. These infusions of beef and of turnip are just as pure to-day as they were last summer. You also observe that this flask containing beef-tea, which was sealed last September, is still fresh and pure. I told you that I had seen flasks containing beef-tea which had been kept for ten years, and that there was no trace of decomposition in the infusion. All of these infusions contained in these various flasks upon this table have remained for months free from any contamination, and they will keep forever fresh and pure, because the micro-organisms which float in the air are prevented from coming in contact with the fluids.

The micro-organisms which cause the decomposition in the beef-tea, and milk and vegetable infusions, cause putrefaction in surgical wounds, and when the surgeon is enabled to operate under conditions which prevent the access of these germs into the wound, he will succeed in obtaining primary intention, in preventing suppuration, which is due to the presence of these germs in the wound. We have studied together this subject carefully during the present session, and I shall now endeavor to make a practical application of this knowledge to the treatment of surgical wounds.

In order to observe the small details of antiseptic surgery, one must have a sublime faith in its belief; because the smallest omission, insignificant as it may seem at the time, may be the cause of a complete failure. You will find some opposition to antiseptic surgery among a certain class of surgeons even at the present day. These surgeons will tell you that for over a half a century they have operated and with no precautions to prevent septic infection, and yet their patients lived, and the wounds healed. Many of you, upon your return home, will find that your preceptors are still unwilling to accept the modern views of the day. They will even deride you for the punctilious manner in which you conduct an operation, and boast that their cases recover without all the red tape and paraphernalia which you have been taught to observe. They even look upon you in disdain, and consider all your precautions as a species of pedantry characteristic of newly-fledged doctors. No great revolution has ever been undertaken without opposition; no reformation has ever been brought about without antagonism. As this is true in the political world, so it has its analogy in the

science of surgery. The opposition and antagonism are to be overcome, not by argument, but by persuasion, and by a reference to clinical facts. Compare the results obtained by the practice of antiseptic surgery of the present time with the results obtained by the older practice of fifty years ago, and an appeal to these facts in a kindly spirit will win over men when arguments will cease to convince. It is natural that men imbued with certain principles from their earliest days in the profession, will not change those views, which have already become fixed, to accept other views foreign to their education, and which views they are expected to accept upon the faith of others. You are to anticipate this opposition, and you are to meet it in a kind and friendly manner; and the time is not far distant when these very men will be convinced of their error.

Before considering in detail the steps necessary to the performance of any important surgical operation, I wish to call your attention to a practical point: always study your patient well before operating upon him or her. There is a good deal besides antiseptics to heed. The victory is not always due to the right use of antiseptics; but other factors enter largely into the calculation. Avail yourself of every possible means which will favor your patient. To this end examine carefully into the personal history. A knowledge of the condition of the heart, lungs, kidneys, and other organs, is essential. You should study his habits of mind and body, allay any anxieties on his or her part, assure the patient that all will be well, and encourage him or her in the hope that a speedy and certain recovery may be confidently expected. If the conditions of the patient do not justify you in such sanguine assurances, modify them according to the individual circumstances of the case, and use judgment and discretion. I believe that the mental condition of a patient has much to do with the prognosis, and that too much importance can not be attached to this fact. In every case you should aim to secure primary intention in the wound, with no constitutional disturbance, and for the accomplishment of these objects let me now direct your attention.

In every surgical operation, besides the general principles already enunciated, there are certain details to be observed, if the operation is to be aseptic, and the carrying out of these details will be considered under six different heads:

First. The disinfection of the operating room.
Second. The purification of instruments, etc.
Third. The preparation of antiseptic dressings.
Fourth. The disinfection of patient.
Fifth. The disinfection of operator.
Sixth. The application of the surgical dressing.

First. The Disinfection of the Operating Room.—The day before the performance of any capital operation, especially if it be one in abdominal surgery, I would recommend the disinfection of the operating room. The room should first be scrubbed and dusted and made ready for an operation. I have used burning sulphur for disinfection. The sulphur should be placed upon an iron tray, which is set upon another and larger tray, and the sulphur is then to be ignited. The tray should be placed in as close contact with the ceiling as is safe from fire, and the fumes of the sulphur will descend and fumigate the entire room. It is useless to place the tray upon the floor, because the gas will not ascend and no disinfection will be accomplished. With regard to the room in which an operation is to be performed in the country: In this case the necessity for disinfection is not so great; but if there has been any sickness in the house or any epidemic in the neighborhood, this process of fumigation is simple. A small room should be selected with southern exposure and the carpet and hangings removed, and sulphur can be burned for a few hours previous to a capital operation. If the room has been carefully scrubbed, cleaned and dusted, and then disinfected, you are safe from any local infection. It is always best to remove the carpet and hangings, because you need only a kitchen table and a stand in the room, and the continuous irrigation will do no damage if all the furniture is removed. The sheets and blankets for use during the operation should be loosely thrown upon the table during the fumigation. To some this step may seem superfluous and unnecessary; but in the event of a great operation every possible precaution should be taken to protect the patient from any infection, and no step is superfluous which has for its object the prevention of septic infection following any surgical operation.

Second. Purification of Instruments, Ligatures, Sutures, Sponges, etc.—Too much importance cannot be attached to a careful cleansing of all instruments for use during a surgical operation. Instruments for perfect disinfection should be of solid metal. The blade and handle should be of one piece and consist of a polished surface. I have abandoned the use of all instruments with ivory or pearl or wooden handles. They cannot be perfectly disinfected, and therefore the metal handles should be substituted. As far as possible forceps, and scissors, and all other instruments should be made to be taken apart and disinfected. I have here upon these tables a most elaborate display of surgical instruments, kindly sent at my request by Mr. W. F. Ford for purposes of illustration. Every instrument is made with the one object in view, and that is thorough and complete disinfection. All scalpels are made of one solid piece, and the handles belonging to the saws and chisels are solid metal. I should recommend you to purchase all instruments so constructed as to permit of perfect disinfection. Before an operation all the instruments to be used should be placed in a glass tray such as you see upon this table. I have requested Mr. Ford to import these glass trays from Germany, as they cannot be obtained in this country. Any glass or porcelain dish can be employed for the instruments; but these are so inexpensive and convenient that they will be found a valuable acquisition. Into these clean glass trays a solution of carbolic acid should be poured, of the strength of 1–20. There should be enough of the solution to completely cover the instruments, which should remain in this disinfecting fluid for an hour or two before an operation. The grease or dirt upon the instruments often prevents

the carbolic acid solution from disinfecting certain parts of the metal, and for this reason it is well to let the instruments soak for some time in the solution. Just before operating this solution may be diluted one half with warm water, 1–40, in order to avoid its destructive effect upon the hands of the operator. Carbolic acid is found to be the least injurious to the instruments as a disinfectant, and bichloride of mercury has been demonstrated to be most deleterious. The ligatures for use should also lie in another small glass tray which has a solution of carbolic acid, 1–20. As catgut is liable to become soft and unfit for use in carbolic acid solutions, it is best to preserve it, when not in use, in oil of juniper. About half an hour before operating, the catgut may be immersed in sublimated alcohol—*i. e.*, hydr. bichlor. gr. vijss to alcohol oj—and kept soaking there during the operation. Catgut is the best material for ligatures, as it is aseptic, will not cause irritation and becomes absorbed. Catgut has been shown to be the starting-point of infection, and therefore it should be obtained from a most reliable place. Catgut cannot well be prepared, and should be purchased only as needed. Silk ligatures, which can be used when the catgut cannot be procured in an emergency, can be, however, prepared by the surgeon without much difficulty. The formula given by Mr. Cheyne is a most useful one: take nine parts of beeswax, one part of carbolic acid, and melt these together. Let the silk lie in this until it is fully impregnated with wax and carbolic acid, then draw the silk through an aseptic towel and the friction will remove the superfluous wax. The ligatures can be cut and placed in a solution of carbolic acid, 1–20. The sutures can be made of catgut, or horsehair, or silk, or silkworm or silver; but whichever variety is used, the suture must be thoroughly disinfected, as well as the hare-lip pins. The lead buttons may be used to prevent tension in large wounds. The drainage is most important in every wound. This can be accomplished by means of tubes or by capillarity, as introduced by Mr. Chiene, of Edinburgh.

The drainage-tubes may be of rubber, and the red rubber is preferable because this kind of rubber tubing contains no free sulphur. The tube should vary in length and diameter according to the size, character and situation of the wound. The tube should have holes cut in it at short distances, and the tube when introduced into a wound should not project beyond the surface of the body, otherwise the tube is pressed upon by the dressings and bandage and the lumen of the tube is occluded. If the rubber tube is left too long a time in the wound it may become adherent to the wound by a process of adhesive inflammation and tear off, and part of the tube is then left behind in the bottom of the wound. This unpleasant complication I have lately had happen to me on two occasions, though the tubes were withdrawn within the required time. To obviate this accident I have of late used a tube made by Mr. Ford at my suggestion, consisting of pure ivory. This is polished smoothly upon its outer and inner surfaces. This tube will not collapse like the rubber tube, nor tear off, and possesses the special advantage that it can be used more than once, as the ivory tube can be as thoroughly cleansed and disinfected for use in several operations. These tubes should be introduced by Lister's sinus forceps, and fastened by a disinfected safety-pin.

Drainage by capillarity is employed by strands of catgut which absorb blood and serum, but not pus. The threads of catgut are collected into a bundle, and this kind of drainage is not removed as the tubes are, since the catgut becomes absorbed. The ends of the catgut are left outside so as to produce a syphon action. Horsehair is also used instead of catgut; but the horsehairs are removed from time to time as it seems necessary.

Another method of absorbable drainage was introdubed by Neuber, of Kiel. This consisted of bone tubes which were decalcified. An improvement to these tubes has been made by Mr. MacEwen, of Glasgow. The method of preparing these tubes as described by him is as follows: "The tibiæ and femora of chickens are scraped and steeped in hydrochloric acid and water, 1–5, until they are soft. Their articular extremities are then snipped off with a pair of scissors; the endosteum is raised at one end and pushed through to the other extremity, along with its contents. They are then re-introduced into a fresh solution of the same strength until they are rendered a little more pliable and softer than what is ultimately required (as they afterwards harden a little by steeping in the carbolized solution). When thus prepared they are placed in a solution of carbolic acid in glycerine, 1–10." In ten days they are ready for use after holes have been punched in them. The tubes will last longer if instead of carbolic acid chromic acid is employed.

Protective oiled silk should be used over the line of suture to prevent the irritation of the carbolic acid, and also to prevent adhesion of the dressing to wound. This protective oiled silk can be made in the following manner as described by Sir Joseph Lister: Take ordinary oiled silk, paint it over with copal varnish, and when dry brush over the surface a mixture consisting of one part of dextrine, two parts of powdered starch, and sixteen parts of carbolic acid, 1–20. Carbolic acid will not permeate the oiled silk if the varnish is added, and the mixture permits the piece of protective to be moistened throughout so that dust will not collect in places upon the protective, as it does when the mixture is not employed.

The sponges to be used in every operation must be carefully disinfected, otherwise they may become prolific and dangerous sources of infection. The process of cleaning, bleaching and disinfecting sponges is very complicated, and I would suggest to you that the druggist do this, and when he has prepared them for you to carefully disinfect them, as this can be easily done by allowing them to stand in a glass fruit-jar containing a solution of carbolic acid, 1–20. The jar should be thoroughly disinfected before using it for this purpose, and it should be hermetically sealed at once and not opened until the operation. Any sponges which have been thus prepared and used can be cleaned by allowing them to

stand in water a few days, and this will decompose and wash out the fibrin contained in the meshes of the sponges, and then they are again put up in the hermetically sealed glass jars. The employment of sponges a second time may be considered safe, if the disinfective process is carefully carried out; it is, however, best in every great operation to prepare fresh new sponges.

Third. The Preparation of Antiseptic Dressings.—There has always been more or less mystery, to say nothing of the expense, about the preparation of antiseptic dressings. It has been thought impossible to obtain them except through some especial agency. There is neither mystery nor expense about the preparation of these dressings, and I shall give you a few hints so that you can prepare them for any case and with but small expense. Every surgeon who practices antiseptic surgery has some modification of his own, and I shall only give you some general hints about the preparation of the dressings, so that you can have at command an easy and simple way of making antiseptic dressings. Bandages can be made by soaking cheese cloth for twenty-four hours in a solution of bichloride of mercury, 1–500, or carbolic acid, 1–20. The cheese cloth should be torn and rolled, and then disinfected again and wrapped in parafine paper and kept in an ordinary tin box, so that the bandages are kept from the air. Naphthaline gauze dressing is made by dissolving the crystallized naphthaline in alcohol (in saturated solution), but never in turpentine, as it is too irritating, and allowing the gauze or mull, which must be free from fat and acids, to soak for a day. This dressing is then dried by allowing the alcohol to evaporate, and the naphthaline powder will become crystallized, and then wrapped in the parafine paper and placed in a tin box.

Carbolized gauze can be made by using parafine, resin, and carbolic acid, and soaking the gauze in this mixture. Instead of using the gauze or mull, it is better to buy the von Brun's hospital gauze, which comes already prepared, and then disinfect it. The ordinary gauze must be subjected to some process to free it from the acids and fats, and this has already been done in the von Brun's gauze. The iodoform gauze is prepared by dipping the ordinary von Brun's hospital gauze, which can be purchased from any wholesale druggist, first into a bichloride solution, 1–1000, for a day, and then into a solution of alcohol and glycerine equal parts. The excess of alcohol is forced out by pressing and the iodoform powder is rubbed well into the gauze, when it is spread out upon a large plate of glass. Or the iodoform may be placed in a bowl and the damp gauze kneaded with the hands until the iodoform is evenly distributed in the meshes of the gauze. Bichloride gauze is prepared by soaking for twelve hours the von Brun's hospital gauze in a solution of bichloride of mercury, 1–500.

Combined dressings can be made by placing a thin layer of borated cotton between two layers of the gauze, which may have been soaked previously in naphthaline, or iodoform, or bichloride of mercury, according to the kind of antiseptic dressing required. There are, of course, many other ways of preparing surgical dressings, but any surgeon, by following these simple instructions, can prepare for himself antiseptic dressings, and also find himself independent in this most important matter. All these dressings, while they can be made aseptic, have one objection in common, and that is the irritating effects upon the skin of certain individuals, and while this is oftentimes a serious objection, at present these dressings are the best we have. I have found the naphthaline in alcohol the only dressing which is less likely to irritate the skin.

Fourth. The Disinfection of Patient.—Any part upon which an operation is to be performed is to be made perfectly clean and aseptic. With this object in view the surface is to be washed well with soap and warm water, and then thoroughly scrubbed with a clean nail brush. After the scrubbing, which will remove the grease and dirt and epithelium from the surface, the part should be cleanly shaved with a sharp razor and then again washed, after which ablution the parts should be disinfected with a solution of bichloride of mercury, 1–500. This solution should be used freely and should be irrigated over the parts from an irrigator which is suspended. The vessel should be placed upon a shelf about six feet above the floor. The strength of bichloride can be 1–500 for the skin; but over a wound 1–2000 is of sufficient strength. If a joint is to be washed out 1–10,000 is strong enough, and if the peritoneal cavity is to be irrigated the solution should be very weak, as the extent of absorbing surface is very great. A part of the intestine could be irrigated by a solution of 1–10,000 if outside of the cavity of the peritoneum; but any solution within the cavity must be very weak. Boro-glycerine is the best solution for the peritoneal cavity. Patients are salivated by a continuous irrigation over an extensive wounded surface.

A rubber cloth is a necessary article during an operation. This should be well washed before using with a solution of carbolic acid, 1–20, or a bichloride solution of 1–500. The rubber sheet should be placed under the patient so as to be above the part to be operated upon, and should be gathered up and fastened by safety pins and the lower end be over a pail in order to catch the solution as it is irrigated over the parts before and during an operation. Long sand bags placed under the rubber sheet will form an artificial trough through and along which the irrigating fluid can flow. If the front legs of the operating table are elevated by placing two bricks or wooden blocks under them the force of gravity will cause the fluid to descend and fall into the pail or any receptacle at the end of the table. Clean towels should be wrung out in a warm solution of bichloride, 1–1000, and placed above and below and upon both sides of the part of the body to be operated upon, and fastened at the corners with safety pins so that the wound will not be touched with any part of the body, or any clothes upon the patient may not come in contact with the wound. Any instrument or sponge thus cannot come in contact with any surface which is not disinfected. After an operation all these

blood-stained towels should be removed and clean ones substituted before any permanent dressing is applied. A saturated solution of iodoform and ether or naphthaline and ether can be poured over the part before an operation; but after a thorough disinfection of the part in the manner already described. From the beginning to the end of an operation continuous irrigation should be kept up, so that the parts, and instruments and sponges and ligatures are continually saturated, and thus protected from any possibility of carrying infection. The strength of the irrigating fluid must be graduated according to the character and situation of the wound. This fact should never be lost sight of, that a safe irrigation for the skin is dangerous for a joint and fatal to the peritoneal cavity. The strength, then, of a solution for continuous irrigation must of necessity vary according to the nature of the part to be irrigated. As it is very desirable to have at hand a ready means of making these solutions, the formulæ of the two most frequently used will be appended:

1. For the *bichloride*, the surgeon should prepare a solution of mercury in glycerine as follows:

℞. Hydr. bichlor..... ℥ij.
Glycerine..... ℥iv.
M.

This will give a strength of half a grain to the minim, so that, using this as a standard, and recollecting that 8 grains to the pint corresponds to 1–1000 (approx.), a solution of any strength may be readily computed. Thus, to make 1–1000, it is only necessary to add 16 minims of the glycerine solution to a pint of water, and this in turn may be diluted to any extent.

2. As alluded to above, the use of mercuric solutions is not devoid of danger, and hence, for other than surface irrigation—as in washing out suppurating cavities, *i. e.*, empyema—a milder and less irritating antiseptic is to be preferred. The material best adapted for this purpose is *salicylic acid* according to the formula of Prof. Thiersch:

℞. Acidi Salicylici..... ʒss.
Acidi borici..... ʒss.
M. Ft. pulv. No. 1.

These powders may be kept on hand, and adding one to a quart of warm water, a solution of convenient strength is secured.

Fifth. The Disinfection of the Operator.—The surgeon and every assistant should be scrupulously clean. The hands should be washed in warm water and soap and scrubbed well with a nail brush and then dipped into a vessel containing carbolic acid or bichloride of mercury. After the hands have thus been washed and the finger-nails cleaned and then disinfected, no towel should be used to dry the hands, for the towel itself may become a source of danger. A rubber apron, previously disinfected, should be worn, and over this a clean white linen apron should be placed, which apron has been carefully prepared by a competent nurse. What has been said in reference to the operator and his assistants is likewise applicable to the trained nurse who is in attendance upon the case, as well as all others who assist in the toilette of the patient. In pointing out these few practical hints in reference to the preparations which should be made for every surgical operation, I do not wish that it should be understood that there is any desire to adhere to one antiseptic solution in preference to others, or to commit myself to any one solution.

The solutions which have been recommended in the lecture this morning are those which up to the present time have been found by the majority of surgeons to be the most satisfactory when all things are taken into consideration. I do not hesitate to state that in my own experience I have seen serious trouble arise from the use of any and all of these solutions. In this bottle is urine which is nearly black, and it was voided by a patient who was obliged to submit to paracentesis thoracis, and the spray of carbolic acid for a few moments thrown upon the chest wall had given rise to this condition of urine. The use of carbolic acid as a disinfectant not only poisons the patient occasionally, but it has been known to produce acute albuminuria in surgeons. Thus it is evident that carbolic acid, while it is the best disinfectant for instruments, sponges, and the surgeon's hands, has nevertheless some serious objections.

Bichloride of mercury is most useful for continuous irrigation, and is perhaps one of the best germicides that can be employed; but it, too, has its objections. Bichloride of mercury ruins surgical instruments, will often produce salivation of patient, and more often will excoriate the skin over whatever part it is used in a dressing.

The question naturally suggests itself to you at this point, what is the best solution to use? I have found sulphurous acid the best for continuous irrigation; but while it is the most efficient germicide, the gas cannot be kept in solution for the purpose of making surgical dressings as the gas escapes from the gauze. Hyposulphite of soda is another excellent solution, and possesses the special advantage of being useful as a disinfectant for instruments, the hands of the operator, for the preparation of surgical dressings and for continuous irrigation; but it has one great disadvantage which prevents its use, and that is the slippery feeling it gives to ligatures and to the surgeon's fingers. Naphthaline is also good for dressings; but it is difficult to get a pure article, and the impure powder is deleterious. I have mentioned these facts simply to show how difficult it is to procure one solution which is applicable for disinfecting instruments without injuring them, for washing the hands without producing unpleasant effects, and finally, for preparing surgical dressings. It is for these reasons that I have already mentioned that up to the present time there is no one germicide which can be used in common for disinfecting instruments, purifying the hands, and preparing dressings. The subject of an efficient germicide with no disadvantages is one still under consideration by surgeons, and until such a perfect germicide is discovered we must be content with what we have at present in use, and employ our solutions with great care and avert as far as possible the serious objections which we find in their use.

An ideal solution is one which can be employed for disinfecting instruments and ligatures and sponges

without detriment, and at the same time be used for continuous irrigation without injury to the patient or to the surgeon, and also one which is easily made and which is economical, and which will not become volatile or render the fingers slippery, or lose its germicidal effect by evaporation. It will be a great advance in antiseptic surgery when a single solution is discovered which will answer all the essential conditions. The great principles of antiseptic surgery will thus be simplified and within the reach of all to carry out in daily surgical practice. The great difficulty heretofore in carrying out the principles of antiseptic surgery in the practice of those not especially educated in this department of surgery has been in the fact that there has been no unanimity of opinion among surgeons as regards the relative value of the different germicidal solutions. Another difficulty has arisen in the fact that one solution of a certain strength must be employed for instruments and another solution for the surgeon, and still another for irrigation, and again another for the dressings. This has led to confusion, and when an ideal solution is found all this technique will be simple instead of complex, and the merest tyro in surgery can carry out the principle upon which this great system of surgery is based.

Sixth. The Application of the Antiseptic Dressings.—Too much importance can not be attached to the permanent dressing after an operation has been performed in an aseptic manner. Carelessness on the part of the surgeon in the application of the dressings may result in complete failure to secure primary intention. The wound should be perfectly dry and free from all loose coagula before the sutures are introduced. The kind of drainage to be employed depends upon the character, situation, depth and size of the wound.

If the wound be small, as, for example, after osteotomy, the strands of catgut inserted into the bottom of the wound with the ends left hanging out of the lower angle of the wound will be found a most efficient and excellent method. If the wound, on the other hand, be large, then a red rubber drainage tube, or the ivory tube on the glass canula, will be found to be the best for providing an escape for the inflammatory exudates which are always present after an extensive wound. The sutures should be of catgut for small wounds; but silk-worm, or silk, or silver, should be employed in amputation wounds or any wounds of considerable size. It is not safe to rely upon catgut if there is likely to be any tension in the wound. I have found that catgut is good for superficial sutures, while the silk-worm or silver, or even hare-lip pins, are best for the deep sutures.

After the edges of the wound are nicely and accurately adjusted by cutting away with a pair of scissors, curved on the flat, any loose fatty or connective tissue which insinuates itself between the lips of the wound, the sutures should be tied, and if any tension exists the button suture can be employed with great advantage. The surface of the wound should now be irrigated for the last time, and then iodoform or naphthaline powder be dusted over the linear incision and then protective placed over the wound, and finally a bandage, which is wet with a bichloride solution, wrapped around the part. The wound is now protected and the surrounding parts are to be carefully dressed. A layer of the combined dressing should now be made to envelop the part at a good distance in every direction from the original wound. This combined dressing should be made secure by an antiseptic bandage. If the wound be a fracture, a plaster-of-paris bandage can now be applied and a layer of borated cotton can be first wrapped about the whole limb before the plaster-of-paris bandage is applied.

If the wound be dressed in general in some such way as has been described, this first dressing need not be disturbed for eight or ten days, unless for the purpose of removing the drainage tube, which can be done without taking down the entire dressings. If the dressings be stained with serum, or there be any other discharge, this first dressing should be removed and a clean new one applied with every antiseptic precaution. It is well in every case to change the dressings after eight days, even if there seems to be nothing wrong. A neglect of this rule has been followed, in my own experience, by some unpleasant complications, and I believe that every surgical wound should be examined as a matter of precaution. I have seen serious trouble occur when a fracture dressing was cut down at the expiration of six weeks; although there never was any evidence or sign of trouble during the six weeks. Whenever a dressing is removed and a new one applied the same attention to details and the same antiseptic precautions should be observed as during the application of the first and original dressing. Carelessness on this point has been followed by suppuration in a wound which had nearly completely healed by primary intention. Every surgical dressing, be it the first or the last, in the history of any wound, should be made with the same care and attention.

Another point seems to me of great importance in the treatment of every wound, and that is the maintenance of absolute rest to the part during the repair of the wound. The equable and uniform pressure upon the wounded part secured by the combined dressings which have been described, are inadequate to secure mechanical fixation to the part without the aid of splints so applied as to maintain physiological rest to the wounded part, as well as the parts in the vicinity of the wound. Every surgeon has his own peculiar way of applying his dressings, and the method which has been described is only intended to impress the general principles involved in wound treatment. The great principles of absolute rest, of free drainage, of uniform compression, of freedom from pain, of absence of constitutional disturbances, together with many other salient principles, are thus maintained by these simple rules in the application of surgical dressings.

Now, gentlemen, having completed the operation with every antiseptic precaution, you are justified in the belief that all will go on well to a successful and and rapid recovery. Should anything happen to prevent primary intention in the wound, you must carefully search for the cause and remedy it at once.

The triumphs of antiseptic surgery are so numerous and so uniform that the cause is to be found in the omission on your part of some detail in the technique of the operation. Look always for the cause to some defect in your manner of operating, or in the use of your antiseptics. If you fail in your first attempts, inquire rigidly into the cause of failure, and do so with the positive assurance that the fault is with you and not with the patient or the system of surgery which you have attempted to practice. It is with this spirit that you should adopt the great principles of antiseptic surgery, and when you are fully convinced by actual experience what great things can be accomplished you will not wonder that hundreds of operations can be consecutively performed and the patients escape from septic infection. We can do now what could not be done a few years ago, and I trust that you may all participate in the great work, and contribute much to the science which we have studied together, and which offers to suffering humanity assistance such as never could be proffered before the introduction of antiseptics.

ORIGINAL ARTICLES.

SOME CASES ILLUSTRATING THE SAFETY OF COCAINE AS AN ANÆSTHETIC IN CATARACT EXTRACTIONS.[1]

BY GEO. E. FROTHINGHAM, M.D.,
PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

During the past year several experienced operators have published cases and experiences that would seem to condemn cocaine as one of the most unsafe anæsthetics to use in the extraction of cataract. Notable among these we may mention the observations of Nettleship, McHardy, and Browne,[1] who have cited their experiences to show that the use of cocaine has a great tendency to produce panophthalmitis in eyes operated on for the extraction of cataract under its influence. Pflüger charges it with producing neuro-paralytic keratitis as a sequel to operations of this kind made under its influence. Dobrobolski, in a quite large per cent. of his cases, had prolonged nausea and vomiting follow as a result of using a four per cent. solution. Traumatic keratitis, tardy and imperfect healing of the wound made in the extractions, were noticed also as a complication in his cases, and ascribed to the cocaine. Bunge reports three complications apparently caused by its use in the clinic of Graefe, at Halle. These were: destruction of corneal epithelium; vesicular eruption on the cornea; and parenchymatous corneal opacity. By this opacity it destroyed the eye in some of the cases, and impaired vision seriously in six cases out of a total of 150.[2] Many other observers have attributed bad results to the action of cocaine.

With a view of contributing to a settlement of the question as to whether any of these results may be fairly charged to the action of cocaine, I have thought it worth while to contribute my experience with it in the extraction of cataract, which I present in the form of a table prepared for me by E. B. Patterson, clerk of the ophthalmic clinic under my charge. (See table on following page.)

A smooth operation was obtained in every case but one (No. 21). In this case a slight escape of vitreous occurred before the irridectomy was completed. The lens was drawn out in its capsule by means of a sharp hook, without further loss of vitreous, and a good result was obtained. V. = $\frac{20}{40}$. There was entire freedom from nausea and vomiting in all the cases in which cocaine was employed as an anæsthetic. Only fresh solutions of cocaine were used.

These constitute all the cases of cataract extraction performed by me at the public clinic from October, 1885, to May, 1886. Although alone insufficient to establish or contradict any of these claimed dangers from the effect of cocaine, they will serve to add to the great mass of statistics by which the questions referred to must ultimately be settled, and which will require the united reports of numerous operators. By reference to the table it will be seen that in thirty-nine extractions made since October 10, 1885, cocaine has been the anæsthetic used in thirty-one of the cases. In thirty of these a four per cent. solution was used. In one case, a feeble lady of 80, a two per cent. solution was substituted. Cocaine failed to act as an anæsthetic in three of the thirty-nine cases, and ether was selected on account of the timidity of the patient in four of the cases. The result was good in thirty-six of the thirty-nine cases, improved in two of the cases, and in the other case, in which the patient died of diabetic coma on the 7th day, the result of the extraction was perfect. There was no complication whatever as far as the healing process was concerned. The vision was clear at the first opening of the eye, and remained so up to the time of the patient's becoming unconscious, a few hours before her death. The other two cases were congenital cataract, which had been neglected beyond the period which permits of good results. In these cases degenerative changes called for extraction. In one, operated on under cocaine, vision was much improved, and no complication occurred during the healing process. In the other ether had to be resorted to; slight iritis followed the operation. The patient improved, and is still gaining in visual power.

No inflammatory complications occurred in thirty-four of the thirty-nine cases. Iritis occurred in four of the cases, in two of which ether was the anæsthetic used.

In about seven hundred cataract extractions I do not remember so large a number of consecutive cases that presented so great freedom from inflammatory trouble, either of the cornea or deeper structures, though I have had a larger number of consecutive cases in which perfect results were ultimately obtained, and also with better average of vision. Nor

[1] Read in the Section on Ophthalmology and Otology, at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] British Medical Journal, Nov. 21, 1885.

[2] Ophthalmic Review, Nov., 1885, p. 338.

No.	Date.	Name and Residence.	Age.	Eye Operated on.	Anæsthetic.	Complication During Healing Process.	Discharg'd.	Result.	Remarks.
	1885.								
1	Oct. 10.	E. F., Fargo, Mich.	28	R	Cocaine, 4 pr. ct.	Oct. 27 a small vesicle which had formed at inner angle of wound was punctured and compress applied; no further trouble.	Nov. 30	Good.	Cataract soft; secondary operation on Nov. 27, by needle. V= 20-30 +.
2	" 1.	E. C., Signet, Ohio.	64	L	"	Had iritis controlled by atropine.	Nov. 27	"	Secondary operation upon opaque membrane, needle, Nov. 11. V. = 20-100.
3	" 11.	Thos. McD., Hillsdale, Mich.	68	R	"	None.	Nov. 9	"	V. = 20-40.
4	" 11.	H. S. A., Bay City, Mich.	66	L	"	Slight iritis, controlled by atropine.	Dec. 12	"	Needle operation on capsule. V. = 20-40. Patient has imbedded in iris a particle of steele; has been there 45 years; was not disturbed.
5	" 14.	Kath. McM., Camden, Ont.	65	L	"	None.	Nov. 13	"	Some soft lens matter remains which obstructs vision; is now undergoing absorption. V. = 20-50.
6	" 16.	Jas. L., Medina, Mich.	78	R	"	None.	Nov. 23	"	Some soft lens matter remained. V. = 20-100.
7	" 16.	Mrs. G. F. C., Adrian, Mich.	40	R	Cocaine failed. Ether used.	None.	Nov. 7	"	V. = 20-100.
8	" 31.	G. W. C. Stanton, Mich.	62	L	Ether.	Had iritis on third day; pupil drawn upward Jan. 13; membrane formed after operation incised and central pupil made.	Jan. 25, 1886	"	V. = 20-40. Patient lost R. E. from inflammation after cataract extraction last year.
9	Nov. 4.	M. B., Bloomdale, Mich.	59	R	Cocaine, 4 pr. ct.	None.	Dec. 8	"	V. = 20-40.
10	" 4.	E. S. G., Albion. Mich.	68	R	"	None.	Nov. 23	"	V. = 20-40.
11	" 11.	H. J., Wayne Co. House, Mich.	51	L	"	None.	Dec. 14	"	V. = 20-70.
12	" 21.	Mrs. C. R., Allendale, Mich.	57	R	"	None.	Dec. 29	"	Dec. 19 secondary operat on (needle). V. = 20-40.
13	" 21.	A. McA., Alpena, Mich.	28	R	Ether.	Had iritis, not severe, but left a membrane.	Dec. 29	"	Patient has had trouble with eyes for several years. L. E. was lost 8 yrs. ago after an operation; R. E. has had two iridectomies; Dec. 19 opaque capsule lacerated, resulting V. = 20-40.
14	Dec. 2	M. W., Swartz Creek, Mich.	34	R	Cocaine, 4 pr. ct.	None.	Dec. 19	"	Some soft lens matter remains, soft cataract. V.= 20-70 and improving.
15	" 2.	E. T., Sherwood, Mich.	53	R	"	None.	Dec. 31	"	V. = 20-20.
16	" 26.	Jas. C., Bowling Green, O.	55	R	Cocaine failed. Ether used.	None.	Jan. 6, 1886	"	V. = 20-40. Cataract had undergone degeneration and was extracted in capsule.
17	" 14. 1886.	E. G., Mt. Pleasant, Mich.	54	L	Cocaine, 4 pr. ct.	None.	 1886	" "	V. = 20-40.
18	Jan. 14.	O. D., Duplaines, Mich.	63	R	"	None.	Feb. 1	"	V. = 20-40.
19	" 16.	M. F., Battle Creek, Mich.	26	R	"	Died on 7th day from diabetic coma; no inflammatory complications of eye.	.....	"	Vision good as determined by usual trial on opening eye. See special reference in summary.
20	" 23.	J. A. McO., Stanley, Ohio.	45	R	Cocaine failed. Ether used.	None..	Feb. 13	"	V. = 20-40.
21	" 20.	J. B., Medina, Mich.	54	L	Cocaine, 4 pr. ct.	None.	Feb. 20	"	Vitreous escaped, lens extracted with sharp hook, resulting V. = 20-40.
22	Feb. 6.	H. A., Schoolcraft, Mich.	70	R	"	None.	Feb. 27	"	V. = 20-70. Has opaque and wrinkled capsule left; can be improved by secondary operation.
23	" 27.	P. G., Flint, Mich.	80	L	"	Iritis on 4th day.	April 1	"	V. = 20-200. Secondary operation for membrane left by iritis made Mar. 17—needle.
24	Mar. 6.	E. R., Clayton, Mich.	60	R	"	None.		"	V. = 20-70. Cataract over-mature and shrunken.
25	Feb.	D. P.	58	L	"	None.	.....	"	V. = 20-40.
26	Mar. 13.	A. W.	52	R	"	None.		"	V. = 20-70. Has opaque and wrinkled capsule, and can be improved by secondary operation.
27	" 13.	C. C., Howell, Mich.	56	R	Ether.	None.		"	V. = 20-20. Cocaine not tried, as patient was too nervous.
28	" 24.	A. S., Paw Paw, Mich.	75	R	Cocaine, 4 pr. ct.	None.		"	V. = 20-70. Slight membrane from capsulitis; April 13 memb. lacerated; April 26 V. = 20-40.
29	" 21.	H. C., Homer, Mich.	67	L	"	None.		"	V. = 20-40.
30	April 3.	J. M., Calumet, Mich.	65	R	"	None.		"	V. = 20-30.
31	Mar. 31.	E. L., Alpena, Mich.	24	L	"	None.		"	V. = 20-40. Soft cataract.
32	April 3.	J. S., Peru, Ind.	70	R	"	None.	April 26	"	Case was complicated by glaucomatous condition. See special reference in summary.
33	" 10.	A. G., Hamilton, Ont.	14	R	Ether.	None, except slight iritis.		"	Metamorphosed soft cataract; needle operation made Dec. 9, '85, but as no absorption had taken place it was necessary to extract it.
34	" 14.	J. L. H., Plainwell, Mich.	70	L	Cocaine, 4 pr. ct.	None.		"	V. = 20-40 +.
35	" 14.	J. R., Britton, Dakota.	16	L	Ether.	None.		"	Degenerated congenital cataract requiring extraction. Patient much improved.
36	" 14.	Mrs. M. A. H., Eaton Rapids, Mich.	80	R	Cocaine, 2 pr. ct.	None.		"	V. = 20-70 +.
37	" 14.	N. P., Chatham, Ont.	57	L	" 4 pr. ct.	None.		"	V. = 20-30.
38	" 17.	C. S., Fayette, Ohio.	68	R	"	None.		"	Test made May 12th. V. = 20-40 +.
39	" 24.	E. F., Fargo, Mich.	28	L	"	None.		"	Vision tested May 10, = 20-40.

have I had so remarkable freedom from nausea and vomiting after the extractions as when ether or chloroform were used, saying nothing of the embarrassment from this cause that so often occurred during the operation when made under these anæsthetics, and which has deterred some operators from resorting to them. By using cocaine we also avoid that agitation of the patient which results from excessive bronchial secretion, so often produced when ether is used. Indeed, in my experience, so often is the patient unpleasantly affected from this action of ether, and the obtaining a smooth operation endangered by it, that I have been in the habit for years of substituting chloroform in all such cases, believing that the increased risk to the life of the patient arising from this substitution is warranted in view of the greater certainty of obtaining a smooth operation, and thus increasing the chances of restoring sight.

From my own experience, I am inclined to regard cocaine as the safest anæsthetic we possess for use in cataract extractions, so far as subsequent complications are concerned. While it may, by its vasomotor constriction, or paralytic action, temporarily diminish the nutrition of the cornea, I believe *that* impairment to be only brief, except in rare cases. I believe it is no more likely to interfere with the healing of the wound in this way, than the general depression arising from the effect of chloroform. From what we, at present, know concerning the action of each of these anæsthetics, it is rational to suppose that there is far less disturbance of the interior circulation of the eye produced by cocaine than by either of the other two, and consequently less liability of panophthalmitis following its use in these operations. So far as its effect to produce shedding of the corneal epithelium is concerned, in most of the cases I have seen reported, antiseptic solutions had also been used, and I am inclined to ascribe this corneal complication to some carelessness in the use of these solutions, rather than to the effect of cocaine. At any rate, it has never been observed by me to follow the use of cocaine when resorted to for this or any other purpose. Solutions of cocaine, when kept for more than a few days, or gelatine tablets containing cocaine (as they are hygroscopic and liable to change). may be attended with danger when used in operations upon the eye.

In reviewing these cases, cases nineteen and thirty-two are worthy of brief special consideration. Case nineteen illustrates how guarded must be our prognosis in all cases of diabetic cataract. This patient had not been aware of her condition, and was made acquainted with it only through the investigations I insist upon as preliminary to cataract extraction. Among these preliminary examinations I insist upon an analysis of the urine. This has been my custom for many years. For the past few years I have been especially urgent upon this point by reason of an unfortunate result that occurred in a case in which I had neglected it, and was thus unprepared to expect misfortune. A lady about 60 years of age presented herself at my clinic having the appearance of a person in good health, and presumed to be perfectly well. She was blind from senile cataract, both lenses presenting the peculiar amber hue, and there was apparently no complication. She was very urgent for an immediate operation, and presented reasons that induced me to yield to her request, and without waiting for the usual urine analysis I operated, using ether as the anæsthetic. The patient suffered from prolonged nausea and vomiting and seemed not fully to recover from the effect of the anæsthetic, and died of coma about ten days after the operation was performed. The wound had healed nicely and the eye presented no sign of complication. Examination of the urine made during the illness showed both albumen and sugar, and an autopsy revealed that the patient suffered from that somewhat rare combination of Bright's disease and diabetes mellitus. Recognizing the injurious effect of ether in Bright's disease, I blamed myself for administering it in this case without knowing the condition and warning the friends of the increased danger.

In case 19, however, we had the diagnosis clear before the operation. As cocaine relieved us of the constitutional disturbance incident to a general anæsthetic, and the patient was courageous, urgently soliciting the operation, and cheerful during its performance, there was no reason for expecting that the extraction might hasten the fatal issue of the disease. All this was duly considered in my discussion of the case before the class, and I had also stated the uncertainty of life in any of these cases. I was not, however, prepared to expect a fatal termination of the disease in this case so soon. The result shows us how careful must be our prognosis as to life in such cases, though it should have no effect to deter us from operating when a person is blind from diabetic cataract and presents no evidence of immediate danger from the constitutional disease. If the patient lives but a few weeks, the blessings of sight will be a sufficient reward for all he endures, and with cocaine we may expect to perform the operation on courageous and hopeful patients with no fear of hastening the fatal issue. Neither can cocaine or the operation be charged with the result in this case.

Case 32 ilustrates the favorable results that sometimes come from apparently hopeless operations, and shows that cocaine may be used safely even when there is increased tension. He began to notice dimness of sight about three years ago, the sight failing slowly but constantly. There was no pain until about three months preceding his appearance at my clinic. During these three months he has had slight pain in eyes, and headache. The left eye was entirely blind; he could not perceive the brightest light, pupil dilated and would not respond to brightest light, lens opaque and pressing against the cornea, + 72, no pain at present. Right eye perceives bright light, pupil dilated and responds slightly and slowly to bright light, lens opaque and bulging into anterior chamber, which is almost completely obliterated, + 71, no pain at present, a few enlarged anastomosing veins in ciliary region. This patient was told that there was no prospect of a successful operation, but at his urgent request it was undertaken on right eye, thinking it possible to preserve perception of

light for awhile longer and perhaps enable him to see large objects. On March 20 a large iridectomy was made, using cocaine as the anæsthetic. The anterior chamber was so nearly obliterated that only by careful use of Graefe's knife could a small incision into the anterior chamber be made, and this had to be enlarged greatly by the scissors to allow a sufficiently large piece of the iris to be seized and excised.

April 3.—The patient has very completely recovered from former operation. Tension normal, and anterior chamber nearly of normal depth. Cocaine was used and lens extracted. Operation smooth, and no after complications occurred.

April 26.—Eye tested, and with $+\frac{2}{7}$ S. $V = \frac{20}{70}$ sharp. Ophthalmoscopic examination showed results of serous choroiditis and there was choroidal atrophy about the disc, but no excavation of disc itself. As regards the action of cocaine, the results in these cases would tend to establish the following propositions:

1. Cocaine relieves the operator from the embarrassments during the operation for cataract that arise from vomiting; also from the agitation of his patient which results from excessive bronchial secretion, or stertorous breathing. These are often very troublesome when ether or chloroform is used.

2. The danger to the result which often arises from nausea and vomiting after the extraction, when other anæsthetics are employed, is very surely avoided when cocaine is selected as the anæsthetic agent and is properly used.

3. The danger arising from the depressing effect of cocaine upon the nutrition of the cornea is no greater than in cases where ether or chloroform are used. The depression of the circulation, which often arises from either of them, may affect very injuriously the corneal nutrition.

4. The disturbance of the circulation of the interior of the eye, and consequent danger of panophthalmitis from this cause, is probably less in using cocaine for this operation, than in resorting to general anæsthesia.

5. The danger of sepsis and consequent panophthalmitis from the use of cocaine may be avoided by using only fresh solutions.

AMPUTATION AT THE HIP JOINT FOR MORBUS COXÆ; WITH A CASE AND A SPECIMEN.[1]

BY DONALD MACLEAN, M.D.,
OF DETROIT, MICH.

The points which I desire especially to enforce by the following case are:

First.—That there are cases of hip joint disease which, though utterly desperate so far as all the ordinary procedures are concerned, may still be rescued and restored to health by the extreme measure of *amputation at the hip joint.*

Second.—That the operation of resection, if performed at all, should be performed at a much earlier stage of the disease than has hitherto been customary.

Third.—That with proper precautions, the operation of amputation at the hip joint for disease is a safe and satisfactory procedure.

Case.—C. S. B.. æt. 17, from Muncie, Ind., came to my public clinic at the University of Michigan January 5 of the present year, and in response to inquiries made the following statement:

Eight years ago, he fell on the ice and sustained a contusion of the left hip. Still, it was not until the following winter that he became so much disabled as to require the aid of a cane in walking. Liniments and electric baths were prescribed at that time, but of course they did not do any good. Two years later extension by means of the weight and pulley was resorted to, also an extension splint, but in spite of these very judicious and rational measures the disease continued to progress.

Eighteen months ago an abscess formed in the region of the trochanter major and was opened. Before long an abscess formed on the inner aspect of the thigh and was opened. From these abscesses sinuses resulted, which have continued to discharge ever since. At the time of his admission into the University Hospital, the discharge from these sinuses was not extremely profuse, but it was intensely fetid. He was greatly emaciated, and suffering from marked hectic symptoms. The thigh was flexed to a right angle with the trunk, and there was no movement discoverable in the hip joint. The knee joint was also flexed and partially anchylosed. All the muscles of the limb were contractured and atrophied. Under these circumstances resection of the joint was at once and for obvious reasons excluded. In short, it seemed that the choice lay altogether between one or the other of the two following alternatives:

First. Expectancy, which of course promised only speedy exhaustion.

Second. Amputation at the hip joint, and this operation commended itself to my mind as a justifiable and even hopeful expedient, provided, *first*, that the pelvic bone should on examination prove to be fairly healthy—that is to say, not too far involved in the carious affection; and *second*, that the general powers of the patient's constitution had not been too thoroughly undermined by the long-standing and exhausting disease. The proposition having been fully explained to the patient (a most intelligent young man), he eagerly assented and placed himself in my hands.

The final decision as to the condition of the os innominatum was reserved till the time of the operation, and had it been found too far diseased the completion of the operation would have been abandoned as useless and unjustifiable. Fortunately, no such reason for the the abandonment of the operation was met with. The disease was confined entirely to the acetabulum, and even there was quite superficial and small in extent.

So far as the strain on the patient's weakened powers was concerned I succeeded in convincing myself that, provided due precautions against hæmorrhage and shock were used, he would be able to weather the storm. With this object in view I determined to

[1] Read before the Surgical Section of the American Medical Association, at the Thirty-Seventh Annual Meeting.

use a simple and somewhat primitive form of aortic compressor: an instrument made under my own directions some years ago by a common blacksmith, and which has afforded me indispensable aid in a considerable number of instances.

The operation was performed on March 1, 1886, under chloroform. Hardly a drop of blood was lost. The patient was only a few minutes on the table. The degree of shock was very slight.

The wound was treated antiseptically throughout and healed rapidly, so that on April 9 the patient was able to return to his home in a better state of health than he had known for several years. Reports recieved up to the present time have been altogether favorable. I now present for inspection by the members of the Section the femur of this patient. It will be observed that the disorganization of the medullary canal extends *from the one end of the bone to the other.* Also, that the head of the bone is very nearly all absorbed away. A single glance at this specimen is sufficient to determine effectually the question of the propriety of the operation; or at least the utter hopelessness of the case without this measure.

Finally, I think we may safely deduce from this case the general principle that if resection of the hip joint is to afford permanent satisfaction, it must be performed at a much earlier stage of the disease than has heretofore been customary; that is to say, while the disease is limited to the head of the bone, and before the medullary canal of the femur has become involved, which it is certain sooner or later to do.

MEDICAL PROGRESS.

RESORCIN.—The *Centralblatt für die ges. Therapie*, March, 1886, contains the following observations concerning resorcin by M. IHLE, of Leipsig, reported by Jarisch. The specific antiseptic properties of resorcin can be best noticed in herpes tonsurans. After two or three applications of a strong resorcin ointment the inflammation is allayed, and if the plates of epidermis tanned by the resorcin are removed, it will be found that only in those hairy regions where the spores have made their way to the bottom of the hair follicles is it necessary to continue treatment.

A very great advantage in the treatment of parasitic sycosis with resorcin is that the beard need not be epilated, the hairs loosening of themselves under the treatment. The pastes used should be applied two or three times a week, thickly with a brush, and rubbed well into the parts, which are then to be covered with cotton. It is at all times well for the physician to apply the preparation himself, and increase the strength with the progress of the cure. For instance, if the first application is a 10 per cent. paste and causes no great irritation, the next may be of 25 per cent. and the strength may be thus gradually increased to 50 or 80 per cent., then when the pus formation and irritation begin to decrease, applications must be continued in decreasing strength, following a similar scale.

As spores may still exist in a case of apparent cure, it is advised to give the patient a 3 per cent. salve to apply at first daily, and later on once or twice a week. Now, for the first, should shaving be permitted, because in the energetic treatment with resorcin, shaving should be absolutely forbidden on account of the irritation which it causes.

The following ointments are recommended:

℞ Resorcin purissim. 10
Vaselini albi. 50
Amyl. Oryzæ,
Zinci Oxidi. .....aa 25
M. ft. past.

With an increase in the amount of resorcin, it is necessary to decrease proportionately the zinc and starch. Therefore for stronger ointments, the following is used:

℞ Resorcin puriss. 50
Vaselin. albi. 60
Zinci Oxid.,
Amyl. Oryzæ. .....aa 20
M. ft. past.

The author speaks of resorcin in the treatment of pityriasis versicolor and eczema marginatum as being attended with absolutely sure results. He also recommends it in the treatment of alopecia areata and seborrhœa cum defluvio capillorum.

For these he uses:

℞ Resorcin puriss. 5.10
Ol. Ricini. ..... 45.
Alcohol .....150.
Bals. Peruv. 0.5
M S. Apply daily to head with a flannel rag.

The itching of the seborrhœa is said to cease entirely under this treatment.

Condylomata acuminata treated with an eighty per cent. resorcin salve, daily applied, quickly disappear. It is well to apply a five to ten per cent. salve for some time afterward to remove the tendency to their redevelopment.

Dr. Ihle does not approve of the application of resorcin to eczema and other inflammatory skin diseases, because of its irritating properties.

Dr. Unna, however, in a pamphlet upon Ichthyol and Resorcin (Hamburg and Leipsig, 1886), recommends a five to ten per cent. ointment in the treatment of seborrhœic eczema resulting from alopecia areata, and prefers it to ichthyol or pyrogallic acid.

He mentions as a special advantage its lack of color and freedom from staining. In psoriasis its action is not so favorable, but for all dry scaly eczemas of the face he recommends it.

On account of the difficulties of diagnosis in skin diseases of the face, he advises that the drug be discontinued the moment it is noticed that no improvement is taking place. In scars or pitting from variola, traumatism, acne, or other cause, and in false keloid he has found it of benefit, but its advantages over ichthyol and other reducing substances lies wholly in the fact that it does not produce discoloration and does not inflame the eyes as does chrysarobin, although under certain circumstances the latter drugs have preference. Dr. Unna declares himself quite convinced that in acute exanthema, and espe-

cially in scarlatina and variola, resorcin is destined to play a very important part.

In chronic skin diseases its use must remain limited to external application.—*Journal of Cutaneous and Venereal Diseases*, August, 1886.

THE CONNECTION BETWEEN GLYCOSURIA AND BILIARY OBSTRUCTION.—DR. W. A. WYATT says it has been demonstrated by Dr. Wickam Legg, and confirmed by Von Wittich, that ligature of the bile-ducts causes the disappearance of glycogen from the liver, and that after ligature glycosuria cannot be produced by puncture of the floor of the fourth ventricle or section of the cervical sympathetic. It is presumed that the retention of bile within the liver interferes with the nutrition of the hepatic cells, and so prevents them from carrying on their natural function of glycogen formation.

The following clinical case appears to me to support the conclusion drawn from the above mentioned experiment. A lady, aged 60, has for some time suffered from glycosuria, and latterly albumen has been present in addition; the amount of sugar excreted usually ranges from 10 to 12 grains per ounce, and no material alteration in this quantity occurred when the urine became albuminous. The urine has been always highly saccharine, even when a strictly nitrogenous diet was enforced, a symptom pointing to the fact that a too rapid metamorphosis of hepatic glycogen was the probable source of the excess of sugar in this case. A short while ago this patient became jaundiced, the urine containing both biliary acid and coloring matters, and with the appearance of the jaundice the sugar diminished from its usual amount to a hardly perceptible trace, Fehling's reagent, the picric acid and indigo carmine tests, giving almost negative results. The disappearance of the sugar could in no way be accounted for by alterations in diet, for the appetite and manner of living remained the same as usual. In this, case, however, there was undoubtedly some obstruction to the bile-ducts, as no bile could be detected passing with the stools, so that a pathological condition was here established analogous in its result to the experimental ligature, for in each case the escape of bile was effectually hindered. If, then, it is correct that the retention of bile within the liver prevents the formation of hepatic glycogen, it necessarily follows that the same retention must greatly diminish the amount of sugar in a case of glycosuria of that type in which the disease is chiefly dependent on a too rapid metamorphosis of glycogen into sugar. In making deductions from a single case, it is well-nigh impossible to separate the *post hoc* from the *propter hoc;* but at any rate, in this case, coincident with the retention of bile, the amount of sugar excreted fell to zero, and remained so as long as the obstruction lasted—speedily, however, regaining its usual amount of 10 grains per ounce as soon as bile was again poured into the intestines.

The whole subject of glycosuria up till now has been elucidated more by the expermental physiologist than by the physician. However valuable such experiments may be, the results obtained from them are often very fallacious, the condition under which they are conducted in many cases being far removed from anything existing in nature, so that confirmation of such observations by clinical work is always highly satisfactory. Of course the phenomena of this case may bear an interpretation differing widely from that which I have assigned to them; still I venture to think that the biliary retention being accompanied by an almost entire absence of sugar in the urine was not a mere coincidence, but that the two symptoms were related to each other as cause and effect.—*Lancet*, May 15, 1886.

HOT BATHS, HOT PACKS, AND PILOCARPINE COMPARED.— DR. ZELENETSKI, of St. Petersburg, in order to examine the comparative effects of hot baths, pilocarpine, and hot wet sheet packing on nephritis, treated the same patients on different days by means of each of these methods, observing the effects on the temperature, pulse, etc. Fifty-seven observations were made on seven patients, who were as nearly as possible under identical conditions. Twenty-three baths, eighteen hypodermic injections of pilocarpine and fifteen hot packs were given. The hot baths produced the greatest loss of weight, averaging 801 grammes, and the packing the least, averaging 94 grammes, pilocarpine producing effects of an intermediate character. Here the mean loss of weight was 514 grammes—306 by perspiration, and 208 by salivation. The temperature rose considerably after the baths, and even at the end of three hours was always above normal. The packing caused it to fall at first; but after an hour it rose, and returned to its original height within three hours. With pilocarpine it was reduced for two hours, and then rose to normal. The pulse corresponded to the temperature with the baths, but became slower with both packs and pilocarpine. The patients expressed themselves as feeling the most improvement after the baths; the pilocarpine causing complications, such as headache and nausea, and in one case vomiting and collapse. —*The Lancet*, June 12, 1886.

THE TREATMENT OF PELVIC HÆMATOCELE BY GALVANO-PUNCTURE.—APOSTOLI and DOLÉRIS, *Zeitschrift für Therapie*, 1885, No. 18, recommend this treatment, their method of operating being as follows: Having carefully determined, by means of rectal and vaginal examinations, the precise relations of the tumor, with special reference to the presence of surrounding intestines or large vessels, they plunge into its most prominent part a needle connected with the negative pole, the positive (consisting of a disc of potter's clay) resting upon the abdomen, and pass as strong a current as can be obtained by a Leclanché battery. The séance lasts from five to ten minutes. A fistulous opening is established in the vaginal fornix, which is kept patent; if it closes prematurely, it is reopened by a second application of the needle. After being opened, the sac is to be irrigated twice daily with an antiseptic solution. The only danger in this operation, according to the writers, is the accidental puncture of a large vessel, the hæmorrhage from which is readily arrested by the cautery.—*New York Med. Journ.*, July 31, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, AUGUST 21, 1886.

POISONS IN FOOD AND DRINK.

As it is fitting that the public should be made aware of the dangers that threaten health and life in food and drink, it is also fitting that such information should come from those who are not only entitled to speak with authority, but who are well known to the outside world. In the August number of *The Forum* is an article, by DR. CYRUS EDSON, of New York, on this subject in which sound ideas as to food and drink are plainly set forth, in language which anyone may understand. The American public is taking more interest in matters of public health each year. Articles on sanitary subjects in newspapers and magazines, sanitary conventions, more of them each year, and the American Public Health Association, and we should not forget to name also the various State and local Boards of Health which are becoming more numerous each year, have given a wonderful impulse to sanitary thought and procedures during the last two or three years. The public is beginning to learn that the necessary results of the neglect of sanitary laws cannot with justice be laid at the door of Providence.

In the article referred to Dr. Edson first deals with drinking water. "How rarely do we stop to consider before drinking a glassful whether it is pure or not? If it be clear and cold, we are satisfied." It would be well if every physician would closely investigate the sources of the drinking water supplied to his patients. Medicine may avail but little if the pig-stye be within a few feet of the well from which the water is obtained. "Given the conditions under which a well exists, it is no more necessary to analyze its water to ascertain its character than it is to analyze the air of a room connected directly with a city sewer to find out if it contains sewer gas. The depth of the well, whether it be walled or piped, the character of the substrata, the proximity of contaminating influences and their amount, are the only factors to be considered." From a consideration of water he passes to that of ice and ice supply. "The idea that water purifies itself by freezing is very prevalent and very deeply rooted. It has led to the use of ice from ponds, the water from which no one would think of drinking. It is true that a few of the solid contaminants may settle and be eliminated in freezing, but that water once polluted is thus rendered safe is a theory long since exploded. Degrees of cold sufficient to kill diseased germs are never experienced in temperate zones. The germs which caused the Plymouth outbreak of (typhoid fever) were shown to have been exposed for three days to a temperature of 20° Fahr." The ice supply should receive as close attention as the source of our drinking water.

Few people understand that it is more than swindling for a dealer, or anyone else, to adulterate milk with water, or that it is a matter of health to prevent any contamination whatever of milk. Not infrequently dealers and others make use of certain preservative salts to keep milk from souring in hot weather; such as borax, boracic and salicylic acids. These are irritating to the kidneys, and should never be used. The physician should exercise the utmost care as to the source of milk to be given to invalids and children, and he should make a personal inspection, if possible, of the cows furnishing them milk, and the manner in which they are treated and fed.

So much has been written of late concerning unwholesome meat that we may pass over the remarks on this subject. It is in the matter of sugar confectionery and jellies that the adulterator becomes an artist. Candies are adulterated to lessen the cost of the manufacture, as may be supposed, by the addition of substances which will diminish the strength without altering its appearance. The articles used for this purpose are terra alba, kaolin, starch, finely ground marble-dust, and pulverized asbestos. Adulterations in sugar confectionery are also used to improve the appearance, the coloring matters most frequently used being chrome yellow (lead chromates), Brunswick green (a mixture of chrome yellow and Prussian blue), red lead, Paris green, arsenical aniline, burnt umber, Venetian red (earths) vermilion (bisulphuret of mercury), and Prussian blue. After this the flavors are to be considered, these being made by distilling certain chemical salts with alcohol and sulphuric acid. One that is especially agreeable is

said to be obtained by treating rotten cheese with sulphuric acid and bichromate of potash. Much of the celebrated "rock and rye" and "rock and rye drops" is made of a preparation of sugar and fusel oil. "A most plausible current jelly, sold until a year ago by nearly every grocer and fruiterer, was made as follows: Dried apples, glucose, water, arsenical fuchsine (a red aniline pigment), tartaric acid, and glue. This mixture was boiled, strained, and sufficient salicylic acid added to keep it from spoiling in hot weather." There are very few of the fruit jellies sold now which are not frauds, though many of them are not dangerous to health. The apple does duty for almost every fruit, the other ingredients being glucose, water, color flavors, and gelatine.

With proper care in selecting canned fruit and vegetables there need be no danger unless the cans themselves are made of improper materials. Coffee and tea are adulterated. Almost all green teas are artificially colored; usually with Prussian blue, turmeric, or soapstone. Mustard is adulterated with terra alba and wheat flour, and then colored with turmeric, or a poisonous coal-tar preparation known as Marsh's yellow. Vermicelli is sometimes colored with chromate of lead instead of eggs or saffron. The notorious "egg powder" is a new name for chrome yellow or lead chromate. Even oleomargarine has been adulterated by the addition of gelatine to make it absorb water, and we can scarcely doubt that impure fats are used in its manufacture.

As regards our foods, then, there are two sources of danger: Accidental contamination, and wilful adulteration. To remedy the first much may be done by educating the public in sanitary science, in Hygiene, the rudiments of which should be taught in every public and private school, and the further principles studied in the higher schools and colleges. In this way the people will be brought to know that the second danger may be averted and avoided by laws defining adulterations and fixing punishments for offenders; and by the appointment of efficient boards of health to carry out the laws; for laws cannot enforce themselves.

DR. FRANK HASTINGS HAMILTON.

In the death of DR. HAMILTON, which took place on Wednesday, August 11, surgery loses one of its masters, and American medicine one of its greatest lights. About two years ago he was attacked with pulmonary hæmorrhages, but on account of a vigorous constitution he safely weathered that storm. Since that time, however, his health has gradually broken, and about three weeks ago he began to decline rapidly. He was born on September 10, 1813, in Wilmington, Vermont, and was therefore in the seventy-third year of his age. He was graduated from the University of Pennsylvania in 1833, having been a member of the medical profession for fifty-three years at the time of his death.

Since 1840 Dr. Hamilton has been known as a surgeon. Previous to 1844, when he removed to Buffalo, N. Y., he was Professor of Surgery in the Fairfield, N. Y., Medical School (1838), and a year later he was elected to the same chair in the Geneva, N. Y., Medical College, which position he held for almost four years. When he removed to Buffalo, in 1844, he became associated with the late Dr. Flint, and two years later they, with Dr. James Platt White, added a medical department to the University of Buffalo. Here Dr. Hamilton was Professor of Surgery for fourteen years, and in 1860 he removed to Brooklyn, where he was elected to the chair of Surgery in the Long Island College Hospital. He entered the Army as a surgeon in the early part of the Civil War, and was successively promoted to the ranks of Brigade-Surgeon and Medical Inspector of the U. S. Army. He was one of the founders of Bellevue Hospital Medical College, and occupied the chair of Surgery in it until 1875, when he resigned it.

Dr. Hamilton has contributed a very great deal to practical surgery and to surgical literature. His bone drill, apparatus for fractured jaw, compound Nélaton's probe, bullet forceps, bone forceps, serrated bone cutter, modified Liston's artery forceps, apparatus for double varus, hare-lip scissors, modification of Owen's tonsillotome, and his improvements and inventions in splints for fractures of the long bones are familiar to all surgeons. To him we are indebted for the use of gutta percha as splints, for the method of closing ulcers by transplantation of skin flaps, for a safe method of cutting the sternal portion of the sterno-mastoid muscle, for the operation of resection of hallux valgus, and for the generally accepted views concerning resection in compound dislocations of long bones. In plastic surgery he has contributed much; a method of operating from the forehead by turning the pedicle, and he was the first to operate from the palm of the hand.

In surgical literature his greatest works are his "Fractures and Dislocations," which is now in the seventh edition, and which has been translated into French and German; his 'Treatise on the Principles and Practice of Surgery," first issued in 1872, and now in the third edition; his "Prognosis in Frac-

tures;" "New Views on Provisional Callus," and a "Treatise on Military Surgery." Besides these he has from time to time contributed valuable articles to current medical literature. It will be remembered that he was one of the consulting surgeons in the case of President Garfield, at the special request of Mrs. Garfield; and that he was instrumental in having the valuable aid of Dr. D. Hayes Agnew. The public has probably forgotten the outrageous treatment of these eminent surgeons by the committee to which was referred the Garfield claims; that people who were nurses or positively detrimental to the case were treated as well and better than they.

Even the enemies of Dr. Hamilton, if he had any, must deplore the loss to American medicine caused by his death. There are few in any country with so fertile a brain and so skilful a hand; so cool, deliberate and careful in speech, action and opinion.

THE PNEUMATIC CABINET.

The "Pneumatic Cabinet" has now been freely discussed in the journals for more than a year. Its physical principles have been set forth, its therapeutic value tested and endorsed by careful workers. That it is a real addition to our therapeutic armamentarium there seems to be sufficient evidence to show. It has not been vaunted as a cure-all for multiple and widely different affections, nor have any claims been put forward which bear absurdity upon their face. The owners of the instrument assure the profession that it will be kept out of the hands of quacks, and that persons desiring to rent it (for it is not for sale) must have the endorsement of the Advisory Board—and so far as can be seen they have endeavored to choose not only respectable but eminent men on this Board—men who can be trusted. Yet the machine does not seem to come into general use. Representative medical men in New York and other cities have, on consultation, advised the manufacturers to cover the Cabinet by patents *owned by the Company*, and it is rented under a contract which confines its control to the original lessee, and applications for its use are referred to an advisory medical board, without whose signatures of approval no application will be granted. The advertisement states that Cabinets are now in operation in New York, Brooklyn, Boston, Albany, Troy, Chicago, Cincinnati, Jacksonville, and other large cities.

The rental of the Cabinet is $250 *per annum*. Let us estimate that each Cabinet costs the company $500, which seems a high estimate. That is an income of 50 per cent. on the capital invested. The lessee of the Cabinet has to pay too much for it, and so the Advisory Board should have pointed out. The high rental can effect nothing in the way of keeping it out of the hands of quacks and irresponsible parties, as that matter is in the hands of the Advisory Board. The Cabinet is practically out of the reach of men in small places; they cannot afford it, however necessary it may seem. And as a rule physicians, and people generally, are not partial to this method of doing business. No physician would wish to rent his pocket-case, his saddle-bags, hypodermatic syringe, speculum or obstetrical forceps, nor would he wish to pay the whole cost in two years' rental. As the case now stands only a very limited number of physicians can afford to have a Cabinet in the office. There is no good reason why a reputable physician should be denied the use of a Cabinet. It is a therapeutic agent, as is an electric battery. It requires no more tact or skill to use one intelligently than does an electric battery; but who would rent a $100 battery at $50 a year? If the owners of the Cabinet wish to keep it out of the hands of quacks by renting it let them reduce the rental. The medical profession will not willingly see any therapeutic agent of value limited to a few men. It by no means follows that a practitioner is incompetent to use a Cabinet because he cannot afford to rent one. The best locomotive engineer in Christendom may be unable to rent an engine for a month.

THE CHOLERA IN EUROPE.

The entire cholera mortality in Europe for four months and a half has been about 2,800, and there seems good reason to believe that it is dying out and will not spread to any considerable extent, though there is still time for further serious outbreaks before cold weather. A cablegram of August 16 states that the geographical area affected by cholera exhibits the capricious behavior of the disease. Thus, it is worse in Barletta, which is far away to the south, where the coast district between Monte Gargano and Brindisi is easily affected. Thence it makes a clear leap of 300 miles to Ravenna and Bologna, then turns northward, extending, though in a less virulent form, throughout Venetia, including the Island of Chioggia, and reaching as far east as Verona, and as far north as Castel Franco, at the foot of the Alps. It is a noteworthy fact that the places most seriously threatened lie in the centre or on the edge of marshy plains formed by the alluvial deposits of rivers or the silting of the sea, which always induce more or less malaria at this season of the year.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, August 2, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

OFFICIAL REPORT.

DR. L. L. MCARTHUR read a paper on

DIAGNOSIS AND TREATMENT OF HEPATIC ABSCESS.

Dr. McArthur divided the causes for abscess of the liver into intrinsic, or causes resident in the liver, and extrinsic, or causes external to and independent of the gland. To the former belong acute congestions, (said to result from heat and cold) tumors, echinococci, biliary calculi, or lumbrici in bile ducts. To the latter, infective emboli, whether carried through the portal vein or hepatic artery, traumatisms, use of alcoholics in excess, high temperatures, surgical operations or lesions anywhere in tract of vena porta or its communications. All abscesses may be divided into idiopathic, infective or embolic and traumatic, in the order of their frequency respectively. First variety most frequently met with in tropics, and hitherto supposed to be due to high temperature irrespective of pathological conditions. Dr. McArthur believes them to be due generally to formation of biliary calculi. Most frequent abscess in this zone is the infective variety. Sources of infection are two: *Per arteriam hepaticum* and *per venam portæ*. First arise most frequently in pyæmia. Aseptic surgery has lessened the number of these cases. We can readily see how abscess of the liver may ensue by infecting particles reaching the liver when we remember all blood of the abdominal organs is returned to the general circulation via the liver. Hence, dysentery, ulcerations of the intestines, operations about anus and rectum, cystotomy, may cause abscess of the liver. Dysentery complicated the four cases he reported. The last variety of abscess, traumatic, comes from direct or indirect violence. The pain in abscess of the liver is severe according to the size of the abscess, its location in the liver, deeply seated or near the peritoneum, the amount of other tissues involved, lungs, stomach, pleura, etc., and its causation. When deeply seated may be symptoms only of "pus somewhere," chills, fever, sweating, etc., with general malaise. Locally, generally sense of weight and uneasiness on jolting. Tenderness variable, usually increase in hepatic area, and bulging of side. Temperature not often high, except when peritonitis; then present an important symptom, a peritoneal friction sound. This is hardly mentioned in literature, and yet is worthy of remembrance. Care should be taken to differentiate between pleurisy, or pneumonia of right lower lobe and hepatic abscess opening in this direction. Surgical interference by Volkmann's or Grave's method should be made as soon as possible. In the following cases two were operated upon and recovered; in the third the expectant treatment was followed and death ensued; in the fourth case a diagnosis was not made because of absence of characteristic symptoms.

On concluding his paper Dr. McArthur gave the following verbal report of cases: The first case was a man, 35 years old, formerly strong and healthy, weighing 160 pounds, a roustabout. Family history good. Four years previous to coming under my observation, while in Louisana, he had had hepatitis with enlarged liver, from malaria. He was engaged when taken in present illness in unloading a cargo of peaches. He ate freely of them, and an acute diarrhœa ensued, which became dysenteric in character. One week prior to admission to the hospital he complained of pain in the hepatic area. At the time of his admission his general nutrition was good, tem. 103, complained of tenderness in the hepatic area, had diarrhœa. On making an examination I found the hepatic area enlarged, with tenderness over it, slight redness of the integument over the right lobe of the liver. On completing the auscultation of the lungs I placed my stethoscope over the liver and heard a very distinct friction sound which characterized the invasion of the peritoneum by inflammation. Three days later a hypodermic syringe was introduced into the liver and pus, and a sero-purulent fluid withdrawn, and the diagnosis of abscess of the liver was completed. As soon as the friction sound had ceased, that is, when adhesion had taken place, an operation was performed by making an incision about two inches in length and carefully dividing the tissues until the peritoneum was reached and the adhesions found; when the abscess was opened, the contents evacuated and a drainage tube inserted. The man was discharged cured in the course of forty-two days. The second case was a man formerly in good health; family history good. He came to the hospital complaining of fever, disagreeable taste in the mouth, pain in the right shoulder and down the back. Normal heart and lung sounds, except on the right side, where their was evidence of commencing pneumonia in the right lower lobe. Marked enlargement of liver in the right hepatic area. In this case the attending physician advised the expectant treatment, hoping that the suspected abscess would open through the lungs, and a cure be effected in that way. In ten days the man died and a large abscess was found in the liver filled with normally appearing pus, complicated by circumscribed pneumonia and diaphragmatic pleurisy, showing the efforts of nature to get rid of the pus in a natural way. The third case was one in which the abscess was deeply situated in the liver substance. There was no local tenderness, no enlargement of the liver, only the sensation of pus somewhere, with rigors, fever, chills and sweating. There had also been a diarrhœa. He finally succumbed to blood poisoning. Post-mortem showed an abscess in liver. The fourth case was in St. Luke's Hospital, and was operated upon and recovered.

DR. FRANK BILLINGS upon invitation said: I probably have had less experience with living patients with abscess of the liver than any one present, and consequently have less that is practical to say about it. While in Vienna I saw a great number of autopsies of abscesses of the liver. Several cases occurred in the

wards, but no diagnosis of abscess was made, the patients suffering from what appeared to be intermittent fever, and usually a diagnosis of that kind was made. A curious thing to me was the fact that a great number of these abscesses were found in new born children. In Vienna, one often sees in the dead-house abscesses which were the result of badly attended cord. The pus had formed in the vein and the inflammation spread upward, finally producing abscess in the liver.

Dr. H. A. Johnson said: While listening to this paper, a somewhat unusual case was recalled to my mind which occurred in the County Hospital when we were down on 18th street. This was a case of abscess in the left lobe of the liver which had communicated, evidently some time before death, with the left lung, and was discharged through the bronchus, When the case came into the hospital it presented all the signs of empyema, and the complication of the abscess with the liver was only discovered in the dead-house. Another case occurs to me in which there was abscess in the right lobe of the liver discharging through the right lung. The patient recovered, but five or six years after a recurrence of the abscess took place, and it discharged into the vena cava, producing instant death. Post-mortem revealed the cavity of the abscess communicating with the vena cava. Both of these cases seemed to me to be somewhat out of the history of abscesses.

Dr. J. J. M. Angear said: In all cases that I have seen the discharge had a fearful odor, and I began to think that if the pus did not have that odor, I should have doubts of its being an abscess of the liver.

Dr. J. A. Robison said: I have just had in the County Hospital a case of abscess of the liver in which the diagnosis was made only after death. The remark of Dr. Billings, that abscess of the liver is often diagnosticated as malaria, leads me to speak of it. The case was that of a woman who had been ill for several months. When I first saw her in the Hospital about a month ago, she was greatly emaciated, jaundiced, and complaining a great deal of pain in the hypogastric region. The liver was not enlarged, temperature ranged from 100 to 102, she had chills every few days, and it was supposed they were due to malaria. She finally died of exhaustion.

There was no diarrhœa, but there was great tenderness over the hypogastric region together with general jaundice. There was also a cachectic appearance which led me to believe there might be catarrhal inflammation of the duodenum which would account for the jaundice. But upon post-mortem examination it was found to be a case of multiple abscesses of the liver, with purulent inflammation of the gall ducts. I have in the hospital another case in which nearly all the signs that Dr. McArthur has spoken of here occurred. The patient is a woman about 40 years of age, in whom the area of liver dulness is greatly increased. Temperature 100, extremely jaundiced, and when she first came into the hospital I heard the friction sound as mentioned in the paper, but that has now disappeared. Since hearing this paper I am led to believe we will find a large abscess of the liver in this case.

Dr. John Bartlett said: At the time of the Mexican War, many of the soldiers returned affected with chronic diarrhœa. In seven of these cases which came under my observation, enormous abscesses of the liver followed. They were not opened, but were particularly examined in the dead-room, some of them containing at least a gallon of pus. As a general rule the patients lived for months. About a year ago I was called to see a case in consultation. The man had been tread upon in a crowd and received a slight injury about the epigastrium. Inflammation followed and abscess of the liver was diagnosticated, but owing to a difference of opinion among the consultants no effort was made even to aspirate. After death, which followed in due course, multiple abscesses were found, one as large as a small cocoanut, another as large as an orange, and fifty other smaller ones. I mention this to prove how hopeless would have been an attempt to improve the condition of this man by aspiration. I saw another case of some interest: The man was shot and some weeks afterward died. I opened the body and found a piece of wadding and the bullet in the liver. The abscess was about as large as two fists and opened into the vena porta. In another case I was called in consultation to see a man who appeared to have an affection of the liver. Both of the attending physicians thought it was a case of abscess. Presently he had symptoms indicating that there was some difficulty in the respiratory organs, and later, but in time to act if we had been more prompt, we discovered that there was a retro-pharyngeal abscess. I immediately expressed the opinion that the abscess in the liver had opened into the anterior mediastinum. I deemed it inexpedient to open this abscess without having other instruments than we had with us. We went to get these, and when we returned we were advised at the gate that the man had been taken with a difficulty of breathing which simulated croup and had immediately expired. Upon examination we found that he had been drowned, as it were, by the pus from the bursting of this large abscess.

Dr. H. N. Moyer asked Dr. McArthur if in the literature on the subject he had seen anything in reference to the presence of acetone in these cases? Jaffey has laid down indications of diagnostic value when this substance is formed. He thought the symptoms might lead to the development of this substance in the urine, and that it might be of some diagnostic value, in suspected cases of abscess of the liver.

Dr. L. L. McArthur said, in closing the discussion, I was interested to learn of another source of abscess of the liver to be by infection from the umbilical cord as related by Dr. Billings. Dr. Johnson's case of abscess of the liver breaking into the left pleura and left lung is the only one I have known of. Rupture into the vena cava is also rare. To Dr. Angear I would say that in the cases I saw the discharge was odorless, and I emphasized that fact in the paper because the books all state that as a rule it possesses a very offensive odor, and is usually of a purulent character. In two of the cases I saw it was of a chocolate color being mixed with blood and liver-

tissue. Dr. Robison speaks of a case as markedly jaundiced. This is set down as an exceedingly rare complication in abscess of the liver. He said that in his case the liver was found in post-mortem to contain multiple abscesses, I would like to ask if the cause was found? (Dr. Robison: We found no cause.) I would ask Dr. Bartlett if his case proved to be a case of abscess of liver with a mediastinal opening? (Dr. Bartlett: We presumed it to be hepatic, but no post-mortem was allowed). As to acetone, I have seen no literature on the subject in connection with the liver. In those cases in which I used the hypodermic needle to make a diagnosis (three in number) two were operated on and recovered, the third was treated by the expectant treatment and died. No careful search was made for the puncture of the needle in the abscess of the liver. After the first two cases I became bold in the use of the hypodermic needle and punctured for the fourth time in one case before I obtained purulent matter.

DR. SCOTT HELM read a paper entitled

A SUBCUTANEOUS METHOD OF THE TREATMENT OF BUBOES, WITH EXHIBITION OF THE INJECTING INSTRUMENT.

His method consists in injecting the suppurating gland, after the pus is withdrawn, with a solution of carbolic acid to wash out the cavity, and then injecting and allowing to remain an emulsion of iodol in pure oleic acid. The injecting instrument consists of a barrel holding two drams, which is mounted on either side by two rings for the fore and middle fingers, and a ring in the end of the piston for the thumb. Three needles, two different sizes of aspirator needles, and one a canula with trocar. To these is attached the centre joint, in which is a stopcock, the opposite extremity of which is attached by a smooth joint to the barrel. In twenty-three cases the treatment was successful in all but the nineteenth, this patient having gone on a protracted spree following the operation. The advantages of the operation are that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appear further away from the initial one; by placing the first glandular abscess in a perfectly aseptic condition you prevent the inflammations of neighboring glands; secondly, there is no cicatrix remaining.

DR. J. ZEISLER: If conservative surgery has any place I think it is in the treatment of buboes, and I think the final bad result of treating buboes by section might be avoided by carrying out the idea of Dr. Helm. It is a good idea to inject iodol as it may be regarded as a specific against the venereal poisons, and their can be hardly a doubt that the suppuration is due generally to the poisons. I would like to know if the doctor has found it sufficient to introduce this iodol emulsion more than once?

DR. G. C. PAOLI said: In the treatment of buboes of course the sooner we get out the pus the better, but those who have had experience with the treatment of buboes know that there are cases in which, in spite of aspirations and subcutaneous injections there is still a morbid process going on which produces mischief and ulcerations of the tissues. I never use carbolic acid, but I have used a watery solution of permanganate of potash, ½ gr. to 6 ounces, injecting it into the cavity. But we all know that we have cases of buboes which in spite of all the skill of the physician produce the greatest suffering. I saw a case where the femoral artery had to be ligated. In temperate persons we have very tedious buboes. Again, where mercury has been used too freely there are often mischievious buboes. Very difficult cases are those in business men who are busy, active, and produce more congestion of the abscesses by their activity. But if we can get the patient to go to bed and rest we succeed better in our treatment. However, I think favorably of the subcutaneous method.

DR. FRANK asked Dr. Helm how many of these buboes were due to gonorrhœa and how many to chancres or chancroids, if any?

DR. H. N. PIERCE said: I had the pleasure of seeing Agnew, Jr., four years ago experiment with the subcutaneous treatment of buboes. He first evacuated the pus by use of the canula, then injected an antiseptic solution, washing it out and afterwards applying a compress bandage. The buboes generally went on from bad to worse, and he tried the same method over again but with no success, and finally he had to cut down upon them and treat them by the old method.

DR. SCOTT HELM in closing the discussion said: I have made, in any case, only one injection, and the time that has elapsed before the patient was discharged has been from eight to fourteen days. In reply to Dr. Feder I would say that these buboes have been aspirated as early as possible, as soon as there was fluctuation. All the pus was removed and the cavity injected with a like quantity of the oleic acid emulsion of iodoform. I have had no case in which there has been a return of the disease in the same chain of glands. I had one case in which there was a bubo appeared some two weeks afterward in the opposite groin, evidently due to gonorrhœa. In the second case, and the last one, which only occurred a few days ago and was not reported, the buboes were caused by gonorrhœa, all the others were due to chancroids.

IN MEMORIAM.

Mr. President: Since our last meeting it has pleased Divine Providence to call from our midst Dr. Robert C. Hamill. The Committee on Necrology respectfully submit the following resolutions:

Resolved, that this Society has learned with profound sorrow of the death of Dr. Hamill, one of the earlier as well as one of the most earnest and efficient members of this Society.

Resolved, that in the death of Dr. Hamill this Society has lost a member typical of the true gentleman in the kindness of his manner, in the great force and energy of his character; typical of the good citizen in his ceaseless efforts to advance the interests of institutions tending to ameliorate the condition of the sick and unfortunate; typical of the patriot in his unceasing efforts to aid and cherish the disabled soldiery of his country; typical of the wise counsellor in the soundness of his judgments; typical of the

true physician in his earnest cultivation of medical knowledge and in his philanthropic practice of the healing art; typical of the faithful Christian in his never flagging zeal in all good works.

Resolved, that the Society extend to the bereaved widow of the deceased in her great loss, sympathy and condolence.

JOHN BARTLETT,
CHAS. GILMAN SMITH,
H. A. JOHNSON
Committee on Necrology.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Forty-Seventh Regular Meeting, Friday Evening, May 28, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

(*Concluded from page 191.*)

The PRESIDENT exhibited specimens removed from

A CASE OF SUPERNUMERARY DIGITS.

While I know the condition is not exceedingly rare, I thought the specimen was so beautiful as to be worthy of presentation to the Society. The specimen consists simply of two supernumerary little fingers, which I found in a beautiful, healthy baby just after it was born, attached by small pedicles, consisting simply of the skin and the vessels needed to supply them, about the middle of the first phalanx of the little finger; the pedicles were perhaps one-sixteenth of an inch in length, just long enough to ligature. They look like little beans; the finger nails are fairly developed in both. They were very vascular. They looked, before removal, like bangles. This was the sixth pregnancy; the other children were all perfect; no other case of this condition in the family that is known. The condition is usually hereditary. In one there is a very good nail formed, upon the other there is only a slight nail. The mother is in good vigor and health. They were united to the larger little finger about the middle of the first phalanx—one was just about the middle of the phalanx, on the outer border; the other half way between the middle line and the outer border. They both feel as if there are bones in them—two phalanges in each, the third being represented by the pedicle.

DR. CHARLES T. PARKES, (Rush Medical College, 1868,) read a paper entitled

UTERINE FIBROIDS TREATED BY THE FLUID EXTRACT OF ERGOT.

My intention is to relate to you the history of four cases of uterine tumor, and to present a few remarks suggested by them. These four cases were treated by the internal administration of Squibb's fluid extract of ergot. They all resulted in recovery by expulsion of the growth.

I found no insurmountable difficulty in giving the medicine, although when given for a prolonged period it creates nausea and disgust in some. This was counteracted, and the pain following its use controlled by combining it with morphine. It seemed to me preferable to the hypodermatic use—the latter being locally painful and often producing abscess, besides it is not followed by any better result. Two of the cases, treated by ergot, when thrown off, proved to be pure uterine fibroma—dense and hard—white and glistening when cut open—consisting of simple fibrous tissue. The other two following the action of ergot were soft myomata—pultaceous and semi-elastic—consisting mostly of connective tissue, confirming the diagnosis made. All four of these were evidently submucous tumors, or so slightly interstitial as to be practically covered only by mucous membrane.

CASE I.—Mrs. S., American, 43 years old, widow, three children, no miscarriages, menstruated first when 16 years old. Never had any noticeable trouble with menstruation until three years previous to my first examination; during these years she had suffered with irregular profuse hæmorrhages which were now continuous, accompanied with exacerbations on the slightest exertion. My first examination was made February 20th, 1876. As my memory brings this patient before me she presented the most perfect example of transparent flesh that I had ever seen. A large, finely formed woman, her flesh looked like alabaster, apparently destitute of blood. The legs were œdematous, the heart beat feeble and rapid, and the slightest exertion was followed by extreme palpitation and the most fearful feelings of suffocation. Her answer as to what she had done for her trouble was that she had taken "quarts of medicine." Vaginal examination revealed an enlarged uterus and patulous os, from which blood was rather freely oozing. The sound entered the uterus about five inches, the handle being deviated forwards and to the left side. A diagnosis of submucous uterine fibroid was made.

The treatment adopted was the administration of strychnia and iron, together with wine and good diet for the general condition, and one-half drachm doses Squibb's fluid extract of ergot every six hours, to either expel or kill the growth. Locally, to stay the hæmorrhage, a small tampon of pulverized alum was applied to the *os uteri* and held in position by ordinary cotton tampons.

The first forty-eight hours' use of the ergot produced quite serious uterine pains, so acute that the patient in her weakened condition said they were unbearable. At this visit Professor T. D. Fitch was with me in consultation. The tampon of alum was removed, and Dr. Fitch's examination confirmed the diagnosis made, and advised the continuation of the treatment. As the bleeding had been entirely controlled by the tamponade, it was left out. The ergot was continued as before, and a sufficient dosage of morphine ordered, to make the pains bearable if they persisted. No further use of the tampon was required, the uterine contractions never ceased while the ergot was administered. On the six h day of its use a foul-smelling serous discharge came on *per vagi-*

nam, accompanied with slight general chilliness, and a temperature of 102° F. The patient was assured that the tumor was surely coming away, and encouraged to bear "yet awhile" with her great suffering. On the eighth day the tumor was found in the vagina and removed. It was about the size of a duck's egg and very hard to the touch. After a short period of mild septic trouble the patient passed through a quick convalescence and rapidly recovered. Save a few months ago she says she has never had any illness since getting rid of this growth, and certainly looks well.

CASE II.—Mrs. P., German, married, five children, no miscarriages, menstruation began at 14, now 37 years old. Seen by myself first in March, 1881. The patient is a robust, hearty woman. Never had any trouble until six months after the birth of last child, about one year ago, when she began to flow too freely and too often—as often as every week or occasionally twice a week. The blood was in large quantity and bright red in color.

The examination revealed an enlarged uterus—it could be felt above the pubis during bimanual examination. The sound entered easily for five inches, the handle deviating forward and to the left. Its use was accompanied and followed by very free bleeding.

Diagnosis.—Submucous uterine fibroid on anterior wall. *Treatment.*—Locally the alum tampon was used as in the previous case. Squibb's fluid extract of ergot in half-drachm doses every six hours. The patient was ordered to remain in bed. On the succeeding day all the tampon, except the alum, was removed. No hæmorrhage; slight pains complained of. On the second day the pains were very severe and morphine was given to control them. The alum tampon was removed and a carbolized hot water injection ordered three times a day. On the third day pains still severe and a foul-smelling vaginal discharge commencing.

This condition persisted until during the night of the eighth day, when I was summoned to the patient on account of the unusual severity of her sufferings, the messenger, her husband, saying it was just as if she were having a baby. On my arrival the pains had quite ceased. Examination showed the loss of considerable blood, and the vagina was found filled with a large fleshy mass, horribly offensive. The finger could be passed beyond it, and the largely opened cervix recognized. It was seized with a Vulsellum forceps, twisted a few times upon itself, and then delivered. The mass was as large as a closed fist, dark colored and ragged all over its surface and very foul-smelling. The patient rapidly regained her usual health, and is well to-day.

CASE III.—Mrs. E., 33 years old, married, three children living, one miscarriage, menstruation commenced when 14 years of age. Was first called to visit her January 2, 1885, for severe uterine hæmorrhage. She then informed me that she never had any menstrual trouble until about two years previous.

Shortly thereafter she was operated upon for laceration of the cervix, without much relief to her trouble, since she had gradually grown worse, so that she was not free from bleeding ten days in the month.

One year previous to my seeing her, the uterus was freely curretted and fuming nitric acid applied to the cavity as a relief to the bleeding. The procedure failed in any good result.

At this visit the bleeding was extreme in degree. Examination revealed the pelvis largely filled with a smooth, doughy mass. After considerable searching the *os uteri* was found high up above and close to the pubis. It could only be found by crowding the finger between the bone and the growth. The growth was exquisitely tender to the touch or any manipulation. Bimanual palpation discovered an uncertain mass above the pubis. The vagina was tamponed temporarily, and morphine administered hypodermatically. The diagnosis was reserved. In my mind it rested between hæmatocele and soft myoma. The tumor was compressible, at least its elements seemed to give way to the pressure of the finger; it was semi-elastic and painful under manipulation, filled the entire posterior half of the pelvis, and the os was carried well upward and forward. It might be and probably was, a myoma of the posterior uterine wall retroverted.

A few weeks ago I had the satisfaction of seeing the *fac simile* of this case, so far as the character of displacement and the position of the tumor was concerned, in a patient under the care of Dr. Merriman, although the tumor in Dr. Merriman's case was much harder and more resistant.

Dr. Merriman, with skill and apparently with ease, lifted the tumor out of the pelvis into the general abdominal cavity, after placing the woman in the knee-elbow position—a change bringing much comfort to the patient. I learn that under the use of ergot the growth is already diminishing in size.

The patient was put upon fluid extract of ergot in one-half drachm doses three times a day. The next menstrual period showed no change other than a diminished loss of blood. In June the flooding was quite free and accompanied with considerable pain. In July everything was as bad as possible, with so much pain that the ergot was discontinued. Repeated examination now narrowed the diagnosis down to soft myoma. The removal of the uterine appendages was suggested, in the hope that this procedure would anticipate the menopause, stop the bleeding, and lead to the gradual atrophy of the growth. In September, consultation was solicited with Professor W. H. Byford, when the patient was etherized and carefully examined. The sound, introduced with great difficulty, owing to the displaced position of the os, passed in over five inches, positively demonstrating the nature of the growth, its consistency showing it to be the soft variety of myoma.

As the patient could not be said to be in absolute danger of her life, the operation was refused by her friends, although the sufferer was willing enough to have it done. The previous treatment was endorsed by Professor Byford, and its continuance advised. The fluid extract of ergot was resumed and rendered bearable by morphine.

The October illness was accompanied by slight hæmorrhage, but excessive pain. The uterine contractions continued on after the menstruation ceased,

until during the last week of October, they became labor-like in character. Examination now revealed that the uterus had righted itself, the os was becoming patulous and its edges thinned out; through its opening the projecting tumor could be felt. On the second day of November, pieces of the broken-down mass, horribly offensive, could be seized with the forceps, pulled out of the uterus and cut away.

Chilly sensations began to be felt by the patient, sweating came on, the temperature ran up to 101° F., and a mild septicæmia was established. During the following week the pains never ceased. Quinia was administered freely. The vagina and uterus were irrigated with hot carbolized injections, and the mass removed as fast as any of it, could be reached, and at the week's end the last remnant was gotten away. The patient was very much reduced physically, but rapidly convalesced, and is now perfectly well, with her menstruation normally reëstablished. Fully a quart of soft pultaceous pieces of the growth were removed.

Case IV.—Mrs. L., German, 34 years old, one child, was seen first November 1885. She had been suffering with increased menstrual flow for a year. She came to me to be treated for an external, painful, labial swelling. It proved to be a vulvo-vaginal abscess. It was opened freely and gave no further trouble. A uterine tumor was noticed and examined. It was found to be of considerable size—could be detected above the pubis.

She was put upon one-half drachm doses of fluid extract of ergot every six hours.

This she continued for six months steadily, with varying conditions of pain and hæmorrhage, until in April, 1886, the hæmorrhage ceased, pain became very severe, and a shreddy, foul-smelling discharge manifested itself. She was removed to the St. Joseph's Hospital, and after ten days of antiseptic washings and removal of masses of broken-down tissue, the mass was entirely extruded. This patient had also quite a severe septicæmia, but finally recovered and is now well.

Remarks.—Aside from crucial demonstration, it seems reasonable to assert that these four cases were cured by means of the remedy used, and by that alone. It is well known that the most of authorities state that no positive reliance can be placed on the use of ergot. My experience, surely, as here illustrated, and confirmed by other cases seen, leads me to think that this adverse judgment must be qualified, especially in the treatment of the submucous bleeding fibroids of the uterus. If the growths be partially interstitial, the less the thickness of uterine tissue between them and the mucous covering, the more certain will the remedy be curative. Of course it will be impossible to demonstrate the exact amount of uterine wall forced contractions will destroy, hence a trial of its worth is desirable in all cases not purely sub-peritoneal and pedunculated. Still I am quite convinced the severity of the hæmorrhage gives one a good reason to speak *positively* of the results to be accomplished by its use. I have not deemed it necessary to look up the history of the first use of this remedy for stimulating uterine contractions. It is sufficient for me to say that my confidence in the remedy and persistence in its use, even when failure of good results seemed certain, has followed directly as the result of the teachings and experience of an honored Fellow of this Society, Professor Wm. H. Byford, who has never lost an opportunity to urge upon the profession his belief in the specific action of the remedy, and its absolute certainty of cure in many cases. I am quite sure that Professor Byford deserves the credit of being the first to make use of ergot with the idea of destroying the vitality of the growth, and as well, causing its expulsion from the uterus.

The third case shows plainly how absolutely unnecessary any operation would have been. The removal of the appendages might have stopped the hæmorrhage, but such a perfect cure as now exists could never have followed operation, to say nothing of the harm done by unsexing the woman; still no case could present better reasons for such a procedure, none in which it would have been more justifiable from the indications present. To me it brings the lesson to make oöphorectomy the *dernièr ressort* in all cases, certainly to give the remedy used at least a six months' trial without result before operation be sanctioned.

The difficulties attending the differentiation between a sack of fluid and the soft myomata was well illustrated by this case. The sensation communicated to the touch was scarcely distinguishable from fluctuation. It was only after repeated examinations under ether, and the use of the sound, that the diagnosis was satisfactorily settled.

The fourth case for a time seemed one in which the treatment would come to nothing. Every one became discouraged. The suffering was increased, and no advance was made, apparently. By persistence the cure was accomplished. In this case operative interference was solicited by the patient, and would have been most readily submitted to, without any urging. If I read aright the indications which authorities give to justify the resort to removal of the uterine appendages, they were all present in this case, and more too if that were needed. Certainly the final result has proven that any such interference would have been uncalled for and lamentable.

I am quite well aware that four cases cannot be considered absolutely demonstrative of any rule; still these four increase the number already published in proof of the curative action of ergot, administered thoroughly, for submucous uterine growths. It is impossible for me to understand how some good authorities can still assert their disbelief in ergot; in fact, calling it the most inert and disappointing of all drugs. No possible argument can disabuse my mind of the belief that its action was positive and certain in the cases related. No law has yet been evolved fixing even by approximation the period of time required for the effects of the medicine to show themselves. The idiosyncrasies of the patient, the thickness of the uterine envelope, the distance from the mucous membrane, the purity of the drug, and many other conditions, render it scarcely possible that any

such law can ever be laid down. The trial should be made patiently and persistently, just so long as the patient's condition will warrant its continuance, and a complete expulsion of the growth, followed by rapid recovery, will be the reward.

DR. F. E. WAXHAM read the following paper, entitled:

OCCLUSION OF THE OS UTERI AS AN IMPEDIMENT TO LABOR, WITH A REPORT OF TWO CASES.

Having met with occlusion of the os but once in several hundred cases of labor, and knowing of a number of physicians of extensive practice who have never seen this condition present at the time of confinement, I am convinced that it must be of rare occurrence, and the history of two cases may not be uninteresting.

Mrs. S., primipara, 29 years old, German, fell in labor about 9 P.M., February 21, 1885. The membranes ruptured soon after the commencement of labor and the amniotic fluid gradually drained away.

The patient was seen between 3 and 4 A.M., at which time the pains had become very severe and frequent. Upon examination the head was found low down in the inferior strait, almost presenting at the vulva, and covered apparently by a thin membrane through which the advancing head threatened to burst with every pain. Upon the most careful digital examination no os could be discovered, nor the slightest indication of one. Professor Nelson was summoned and promptly responded. His more experienced finger detected a very slight dimple in the centre of the presenting tissues. By keeping the finger upon this slightly thickened tissue, he discovered that it became very much thinner with every pain, while as the pain subsided the tissue assumed a very slightly umbilicated appearance. By firm and continued pressure upon this suspicious spot an opening was at length effected and the os gradually dilated. As the labor proceeded slowly, and fearing the result to the child of so long a delay of the head in the pelvis, and the os being fully dilated, the forceps were applied. The child was delivered without injury to the mother, but it was asphyxiated and required considerable effort in resuscitation. Professor Nelson stated that this was the second case that had evei come under his observation, and kindly gave me the history of the following one: He was called to attend a lady in her first confinement, a Swede, 23 years old, and married about one year. Making a hasty examination, he found a well-formed cervix but did not detect the os. On returning a few hours later, the head had descended to the inferior strait and was indeed presenting at the vulva and covered by the cervix, which had become so thin as to resemble the membranes. The membranes had already ruptured and the amniotic fluid had gradually escaped. There was no appearance whatever of the os. It could not be detected with the finger, and the head seemed about to burst through the uterine tissue. The patient was placed before a window, the labia separated and careful search made for the os. Only after a most careful search was it found. It was patulous only to the extent of admitting the very finest surgeon's probe. After this had been introeuced and worked about a second probe was passed, and by separating them the os was gradually and sufficiently dilated to allow the finger to enter. The os was then rapidly dilated and labor progressed normally.

I find the literature on this subject quite meagre, many of our writers on obstetrics omitting the subject entirely, while others refer to it very briefly.

Schroeder alludes to it in the following terms:

"As complete atresia of the os prevents conception, it follows that an occlusion of the os, observed in labor, must have taken place during pregnancy.

"Very frequently there is a superficial and easily separable agglutination of the external os. It is due to an inflammatory process of the lips of the os from a previous blenorrhœa. During labor the advancing head is seen to push the lower uterine segment forward to the outlet, and to thin it more and more. This thinning may be so great that the head appears to be covered only by the membranes. By an accurate examination the os feels like a small and soft dimple directed greatly backwards. If during a pain the finger or uterine sound be forcibly pressed against the dimple, the agglutination of the os will suddenly give way. The os itself now very rapidly dilates and labor proceeds without impediment. Often the pains themselves succeed in breaking down the adhesions of the os.

"It very rarely happens that the os only partially dilates after the agglutination has been torn through and remains rigid so as to later require incisions. There is very seldom so firm an adhesion between the maternal and fœtal membranes in the immediate vicinity of the internal os that the lower uterine segment cannot retract over the ovum. Separation by the finger or rupture of the membranes renders possible the dilation of the os."

Schroeder also refers to the fact that a firm cicatricial band may occasionally occlude the os, resulting from inflammation of the cervix or cauterization:

"When these firm adhesive bands prevent dilatation of the os there is danger of rupture of the vault of the vagina unless incisions are made and assistance given. The cicatricial closure of the os is frequently incomplete; more or less fine openings remaining pervious, rendering conception difficult but still possible, is believed by Schroeder to frequently result from ulcerative inflammation during the lying-in state."

Leishman, in discussing this subject, remarks that

"There are some cases in which there seems to be actual occlusion of the os. Impregnation in the case of an absolutely occluded os is as impossible as that the normal function of menstruation should be carried on, and therefore we must assume, in such cases, that the closure must have taken place subsequently to the entrance of the seminal fluid. It is of course possible that the os may remain open to a very limited extent, and yet the state of the tissues renders distension impossible, so as to practically constitute an impediment as insurmountable as actual occlusion would be."

Playfair mentions this condition as follows:

"Agglutination of the margin of the os uteri is occasionally met with and must of course occurred after conception. It is generally the result of some inflammatory affection of the cervix during the early months of pregnancy. Usually it is not associated with any rigidity or hardness, but the entire cervix is stretched over the presenting part and forms a smooth covering in which the os exists only as a small dimple, and may be very difficult to detect at all. Occlusion of the os from inflammatory changes sometimes so alters the cervix that no sign of the original opening can be discovered."

All our authorities agree that the occlusion of the os is the result of inflammatory change occurring subsequent to impregnation. It is a noteworthy fact that in both these cases the membranes ruptured and the amniotic fluid escaped in the very early stages of labor, showing that the membranes were adherent to the uterine tissue about the internal os. As the internal os dilated, rupture of the adhesions and of the membranes necessarily followed.

The discussion of the papers read by Drs. Parkes and Waxham was, on motion, deferred until the June meeting.

Mr. Lawson Tait, of Birmingham, and Dr. T. Gaillard Thomas, of New York, were elected Honorary Fellows of the Society.

Dr. E. C. Dudley proposed for honorary fellowship Protheroe Smith, M.D., M.R.C.P., of London.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, April 21, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

DR. J. TABER JOHNSON presented a

CYST OF THE BROAD LIGAMENT,

which he had removed that day. The following is a brief history of the case:

Mrs. T., white, a widow, never pregnant, aged 32, first noticed that she had a tumor growing low down in her left side, last June, just eleven months ago. It gave her considerable pain, especially in her bladder, and caused her to pass water frequently. She began to be irregular in her periods, missing at one time as many as four months. Her appetite and digestion became impaired, and she lost flesh rapidly. She became nervous and apprehensive, and lost much sleep. Her face was thin, careworn, and presented the characteristic "facies ovariana" to a marked degree.

She was sent to him by Dr. N. S. Lincoln. She presented the appearance of a woman eight months pregnant. Upon examination Dr. Johnson diagnosed a cystic tumor, and said it was probably ovarian, but declined to say positively until after the operation, which he advised should be made at once.

Dr. Lincoln and the patient agreeing with this view, he appointed the next Wednesday for the operation. As Mrs. T. declined to go to an hospital, her house was made as aseptic as possible, and the tumor was removed on the April 21, with the assistance of Drs. Cutts, Brownell, and Cuthbert.

Dr. Lincoln was present and kindly approved of the various steps of the operation. The cyst and its contents weighed eight pounds. After being emptied of its contents is was removed through an incision not more than three inches in length. There were no adhesions; the pedicle was unusually broad; it was transfixed and tied in two divisions, and burned off with the thermo-cautery. The ovary was found to lie upon the surface of the cyst, and was attached to it by a broad membranous band.

P. S May 5.—The patient is doing well; the wound healed by first intention, and she is sitting up.

In accordance with the resolution requesting CAPTAIN SYMONS, U. S. A., to present his

METHOD OF FILTERING THE CITY WATER SUPPLY,

passed at the last meeting, the Captain kindly appeared before the Society and read a paper, of which the following is an abstract: He said that complaints of the condition of the water were frequent, especially among the new-comers to the city. On investigation he found that physicians considered it unwholesome for invalids and children, the temperance people thought it was a stumbling-block to their cause, and that the people in general, when it was at its worst, were alarmed lest it be the cause of some epidemic. Moreover, the expenses of house filtering and boiling the water, as was frequently done, was an unnecessary tax on the people. Domestic filtration at best only half reached the desired end, and these filters might easily become the foci of disease from the decay of accumulated filtrates. Many different analyses of the water showed a varying amount of organic impurities, but all samples contained more than there should be in a water of the highest excellence. In 1882 three chemists examined the water. Two reported it as of "medium purity," and one as "good." The biological examination, made under the same auspices, showed it as "doubtful."

Comparison with the London and Berlin supply showed our water to contain fewer impurities than did the waters of those cities at their sources, but more than was in them after they had been filtered for use. A circular letter which he had addressed to the physicians of the city had elicited the reply that the water was unsatisfactory and needed purification. In view of these facts, he had undertaken an investigation with the hope of solving the difficulty, and of giving the city a cheap and efficient method of filtering its water before delivery. The drainage area of the Potomac above the point where it is tapped for this city is about 12,000 square miles. There are several, at present, small towns in this area which pass their sewage into the river. The lands are highly cultivated and every year more fertilizers are being used, forests are being cut down, and thus increasing sources of pollution are constantly arising. These it will soon be necessary to check, as have already some of the European cities. He then went on to say that there were three ways usually applicable for the filtration of the quantity of water necessary for

a city, namely: *Large subsidence reservoirs*, *natural infiltration* into galleries built along the margin of or in or under a river, and *artificial filter beds*.

Clarification by subsidence, which was the only system of the three in use here, would not do well in a warm climate, for the water, which must of necessity remain in a quiescent state for three or four weeks, would become full of aquatic life and fungi. This was the cause of our alarm last summer. The natural filtration, which is applicable *only* where large deposits of sand or gravel are found in a convenient position along the water supply, is probably the cheapest and best. In this large chambers or wells are dug, and when full of water percolated from the river or lake are emptied of their contents for use.

Artificial filter beds consist of tight masonry basins with drains along their bottoms radiating to the outlet. First is put in a layer of coarse gravel, then a layer of finer gravel, and finally the true filter, about five feet of fine sand. The river water is then run through these layers and conveyed to a large reservoir for distribution. The first cost of such a system would be tremendous, as about twelve acres of such beds would be necessary to keep this city supplied. It is also very difficult and expensive keeping them clean.

It is estimated that the city at present uses from twenty-five to thirty million gallons daily. With the new tunnel there will be about thirty-five million gallons supplied daily. Eventually from thirty-five to forty million gallons will be needed, and the new system proposed will provide this amount of filtered water.

Capt. Symons proposes to use a modification of a system which has been in use in manufactories for some time. He has found that certain engineering difficulties can be overcome, and can see no reason why it should not be a success. The system requires the use of fourteen steel tanks 30 ft. in diameter and 17 ft. high. 8′ 10″ up from the bottom each tank is divided into two compartments by a stout diaphragm. The diaphragm is perforated by valves and by two large pipes which extend nearly from the bottom to the top of the tank. In the lower compartment is placed about 8 ft. of sand and powdered coke. The valves being shut in the pipes and diaphragm the water is run in on top of the sand and coke and between it and the diaphragm. After percolating through the filter it is run out, ready for use, by an outlet pipe at the bottom. This process is helped by the pressure of the incoming water. When the filters are to be washed, the inlet water is thrown by means of valves into the outlet pipes, the valves in the pipe perforating the diaphragm are opened, and the whole mass rushes with violent agitation into the upper compartment, which is open to the air. The heavy coke and sand are here allowed to settle, while the water which contains the filtrate is run off by an appropriate pipe. The filtering material is then got back into the lower compartment by opening the valves in the diaphragm, being at the same time a second time flushed with water. The river water is now led in by the inlet pipe as before. The first that comes through being somewhat muddy, is conveyed to the upper compartment to be used in the next washing. Each tank is independent of the others and can be cleaned without cutting off a sufficient supply of water.

The very undesirable loss of "head" which the water sustains in filtering can be more tham compensated for by the introduction of centrifugal pumps in the circuit. These pumps are designed to be run by the waste water from the washings with any necessary addition. Previous to leading the water to the filters it is proposed to intimately mix it with one-fifth its bulk of atmospheric air and a certain very small proportion of alum. With these last two additions it is hoped that both the inorganic, the albuminous, gelatinous and ammoniacal matters will be oxidized or precipitated so that they can be easily filtered out.

The experiments of Prof. Frankland, of England, and other chemists, have proved that after being subjected to the above processes, water comes out clear and sparkling, and freed from almost all of its organic and inorganic contents.

The distributing reservoir just west of Georgetown is divided into two parts by a wall. The upper lake contains about 110,000,000 gallons and the lower about 60,000,000 gallons of water. It is proposed to set up these filters between the two parts, to use the upper one as a subsidence reservoir, and the lower one, from which run the city supply pipes and the new tunnel, as a receiving reservoir for the clarified water. He thinks this plan perfectly feasible, economical and efficient.

DR. REYBURN asked where alum was in use?

CAPT. SYMONS replied he had seen it in Somerville, N. J., and it had a wonderful effect. Albany was about to put up similar arrangements.

DR. ANTISELL remarked that the removal of inorganic matters was the first and most important step in this case. He thought that it would be a long time before organic substances in the Potomac would give us any alarm. What we wanted chiefly was the removal of the mud which appears after every heavy rain. This had been accomplished in Europe by good filtering beds. This system he thought the cheapest and best. Aeration was being used in Philadelphia and other places, and was well enough, but the sediment was the principal inconvenience. The method of Hyatt which was proposed he was unfamiliar with.

CAPT. SYMONS replied that the primary object of this system was just what the doctor advised, and that it was much cheaper than the filter bed system, both in first cost and maintenance.

DR. REYBURN said that it had been conclusively shown that proper filtration removed bacteria as well as inorganic matter, and that even when organisms were in great numbers they could be nearly eliminated.

DR. ANTISELL said that that in all certainty there were bacteria in the water, but he never had heard that they had done any harm. It was well, however, to have water as free as possible from them.

DR. KING said that he had recently been conversing with Dr. T. Smith, who had informed him that the water of some European city contained 20,000,000 bacteria to the litre, and ours only 3,000,000.

CAPT. SYMONS, in reply to a question as to the cost, said that he did not know, but it was certainly less than the filter bed system.

Dr. Toner asked if it were not possible to use Powder Mill Creek as a subsidence reservoir; and if analyses of our water are being made from time to time?

Capt. Symons replied that it was perfectly possible to use the valley of a stream for a reservoir, and that estimates had already been made in this case as suggested. He said that Dr. Theobald Smith and Dr. Billings had made analyses. He further remarked that the impurities in our water were of such a light nature that they took from three to four weeks to settle, which was too long a time for the good of the water in this climate.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Inoculations for Rabies—Influence of Diabetes on Gestation—Fumigations with Tar and Turpentine in Croup.

The treatment of rabies by inoculation seems to have taken an unfavorable turn lately, for within the last three months there have been no less than six deaths reported from hydrophobia in persons who had returned home after having gone through the process of M. Pasteur's inoculations. On the 27th of April last a young girl of 11 years of age was bitten by a dog at Chassagne (Jura). Nine days after she was brought to M. Pasteur's laboratory and went regularly through the ten inoculations prescribed. She remained in Paris fifteen days altogether, when she was pronounced cured and sent back to her family. On the 13th of June, that is, forty-eight days after she had been bitten, or thirty-nine days after the first inoculation, symptoms of hydrophobia set in and she died on the 17th of June.

The *Journal de Médecine de Paris* reports that one of the Russian women who had been inoculated at M. Pasteur's laboratory after having been bitten by a wolf has just succumbed to rabies at her own home, whither she had returned "completely cured," according to the expression adopted by M. Pasteur. This death makes the fourteenth of the fifty-four persons bitten by wolves, which would give a mortality of about 26 per cent. On the 21st of July a man aged 35 died at Grenoble from hydrophobia. He had been bitten on the hand by a rabid cat on the 30th of April last, and had gone through the preventive treatment at Paris from the 4th to the 13th of May. This makes the fourth death from hydrophobia of the persons who were treated at M. Pasteur's laboratory, exclusive of the Russians bitten by mad wolves. A letter from St. Petersburg reports that on the 3d and 4th of May last seven persons (five children and two women) were bitten by a mad dog. They were sent on to Paris under the care of a doctor, to be treated after M. Pasteur's method. Of these seven patients, three have died since their return to Russia.

A rather comico-scientific conference was lately held in Paris, the object of which was to criticise the so-called anti-rabic inoculations of M. Pasteur, the actual efficacy of which is questioned in certain quarters. The officers were recruited principally from the Paris Municipal Councillors, and were it not that some of them belong to the medical profession, the proceedings of the meeting would not have been noticed here. One of the speakers, M. Paul Bouillier, a veterinarian, member of the Paris Municipal Council, began by stating that there were no microbes in rabies, or if there was any discovery made in that direction it was not due to M. Pasteur, but to a physician at Toulouse whose modesty has prevented him from claiming the right of the discovery. Moreover, this worthy veterinarian stated that M. Pasteur's inoculations have no effect whatever in preventing hydrophobia; that the method in question serves only to produce meningitis and nervous affections, and that those supposed to have been cured were never affected by the rabic virus of the animal that bit them. He has even challenged M. Pasteur to put his method to a personal test: he and his adversary are to be bitten by an undoubtedly rabid dog. Then the Councillor is to be cauterized, and the Professor inoculated. The contest will be decided when one of them goes mad.

Another speaker made out that according to an official communication, the number of persons inoculated to this date at M. Pasteur's laboratory amounted to 1,630. Among these there have been only twelve deaths: five persons have succumbed to the bites of dogs, one to that of a cat, and six to the bites of wolves. Here M. Bouillier, interrupting, suggested that these patients died from one or other of the diseases above referred to, viz.: meningitis or a nervous affection.

Another critic recalls that M. Pasteur had made the positive announcement that his method would protect even if one or two years had elapsed after the bite. This time was subsequently reduced to thirty-five days, but afterwards he even limited it to fifteen, and now, since the more recent deaths, he will be obliged to reduce it still further to thirteen days.

In an interesting paper by Dr. Lecorché which he lately read before the Medical Society of Hospitals, on the *Influence of Diabetes on Gestation*, the author has shown that diabetes does not render women sterile. He had six diabetic patients who were delivered of children at full term, but they were all delicate. According to this physician, when diabetic women are sterile, it is due to uterine lesions resulting from diabetes. Diabetes has direct influence on the process of gestation, impairs fœtal nutrition, and is favorable to faulty development, especially hydrocephalus. It often produces dysmenorrhœa and amenorrhœa, and an early menopause often results from an overlooked diabetes. If the sugar disappear, the menses may return.

A short time ago Dr. Delthil vaunted the use of *Fumigations of Tar and of the Essence of Turpentine in the Treatment of Croup*. At a meeting of the Medical Society of Hospitals, Dr. Cadet de Gassicourt said that from his experience these vapors had

no solvent action on false membranes placed in the open air. He had tried the method in twelve cases at the hospital, all of which nevertheless necessitated tracheotomy. Four of these were cured and eight died. The fumigations are not well borne, and after the operation they cannot be continued, as they rapidly obstruct the tracheotomy tubes, and at the autopsy coal-like parcels were found in the bronchi, which is one of the dangers of this treatment, which should be rejected. In fact, Dr. Delthil himself has given it up, and contents himself with simple inhalations, at a distance, of the vapors of the essence of turpentine. A. B.

NECROLOGY.

DR. CHARLES H. LIEBERMANN,

of Washington, one of the oldest and most accomplished physicians of that city, died at his residence, 722 Twelfth street, N. W., on March 27, 1886, in his 74th year. He was born in Riga, the capital of the Province of Livonia, in Russia, on September 15, 1812. His father was a military surgeon, and died while the subject of this sketch was a child. His mother belonged to the family of the Radetzkeys, which has furnished many famous personages in German and Polish history. The doctor's uncle became his guardian, and faithfully carried out the injunctions of his father to give the child a good education. He passed through the usual course of the gymnasium, after which he entered the University of Dorpat, from which he graduated in letters and the natural sciences in 1836. From Dorpat he went to Wilna, where he pursued for a time the regular medical studies, but after some time he returned to Dorpat, and from there he went to the University of Berlin, from which he received his medical degree in 1838. In Vienna he became a private pupil of Prof. Diefenbach, and served for some time as his assistant, and became entirely familiar with that eminent surgeon's improvements and methods of practice in surgery. This was at a period when the profession of Europe was making rapid advances in the study and treatment of a class of cases which fell rather under the denomination of deformities, than that of diseases, and which had been everywhere much neglected. At the head of these might be placed strabismus and club-foot. Dr. Liebermann enjoyed the advantages of the lectures and clinics of the famous von Graafe, in his treatment of affections of the eye. This surgeon was then among the most noted practitioners of Europe in this specialty. After receiving his degree Dr. Liebermann visited the chief capitals of Europe to familiarize himself with the practice of medicine and surgery in their best hospitals.

Dr. Liebermann came to the United States early in 1840. He landed at Boston, but had conceived a desire to settle in Washington. This preference was probably developed because of the political views he entertained and the disagreeable experiences he had already suffered from the despotic regulations exercised over the actions of the private citizen in his native land. He began the practice of his profession in Washington shortly after his arrival, opening an office on the north side of Pennsylvania Ave., between 9th and 10th streets. The following is a copy of his first newspaper advertisement, which I have seen. It is taken from the *National Intelligencer* of March 17, 1841: "Dr. Charles H. Liebermann has removed his office to the basement of his residence, northwest corner of 11th and F streets. Dr. L. is ready at all times to advise or practice either medicine, surgery or midwifery, for the poor gratis, not excepting capital operations. March 17, 1841."

After a residence at this F street location for about two years he returned to Pennsylvania Ave. and took a house on the south side, between 9th and 10th streets (see Washington City Directory for 1843). The following notice relative to Dr. Liebermann appeared in the *National Intelligencer* of May 25, 1841, and as it gives some information not otherwise met with as to the Doctor's professional education, and the esteem in which his skill and abilities were held by his teachers and fellow-students, it is copied in part: "*Strabismus, Cataract, and Clubfoot.*—In the last number of the *Medico-Chirurgical Central-Zeitung*, of Berlin, we notice the following paragraph, published by the professors of Berlin: Dr. Charles H. Liebermann, formerly a student at our University, who so eminently distinguished himself here by his attainments as a physician, surgeon, and oculist, has emigrated to the United States of America. While we believed him yet journeying in the Western hemisphere for the purpose of selecting a suitable locality as the theatre of his professional labors, we were agreeably surprised and now sincerely rejoice to see it announced in some of the public papers of that country that Dr. Liebermann had already and with signal success performed there our newly discovered operation for the cure of strabismus, or squinting, as well as several operations for the cataract and clubfoot."

Professor Dieffenbach, the originator of the operation for the cure of strabismus, adds to the above the following: "Dr. Liebermann, who has been one of my distinguished pupils, and for some time after closing his academical course, my associate in the practice of medicine and surgery, was, after myself, the third physician in Europe and the first one in the United States who, as early as October last (1840), performed the operation for strabismus with complete success."

The medical profession of the United States, as well as the politicians of the country, saw with some regret the rapid emigration and the prominent positions given in the professions and public places requiring scientific acquirements, to foreigners. Dr. Liebermann had to contend with this feeling, but he was so well equipped in professional attainments, and was so discreet and honorable in his intercourse with medical men, that he soon gained not only the high regard of his brother practitioners, but of the citizens in general, which he retained to the close of his life. He identified himself, as soon as practicable, with the profession of the city by joining the

Medical Society of the District of Columbia, which he did in 1844. He held in it, at different times, many of its offices, and was its President from 1865 to 1868. He is registered as joining the Medical Association of the District of Columbia in 1843. He was also a member of the Columbia Institute, which had in it a section devoted to medical science. This was, before the days of the Smithsonian Institute, an active scientific organization. He was one of the founders of the Medical Department of the University of Georgetown, and filled the chair of Professor of Surgery from 1849 to 1853. He again filled the same chair from 1857 to 1861, when he resigned, and was elected Emeritus Professor of Surgery. He was also a member of the first Pathological Society of Washington, organized in 1841; also a member of the American Medical Association in 1858. He was well calculated by natural abilities, as well as by his thorough literary and professional training, to make himself interesting in the discussion of diseases, their cause and treatment. His tastes, however, led him to surgery, in which he excelled. He had much mechanical ingenuity, which enabled him to succeed in the treatment of cataract, joints and deformities. He was for over twenty years the leading oculist in Washington. He was for years physician to the Sisters of the Visitation Convent, and the consulting physician to Georgetown College and the Convent in Georgetown. He was also a member of the staff and consulting surgeon to the Providence Hospital for a number of years.

He was systematic and thorough in whatever he engaged in, and was thus enabled for years to attend with punctuality and efficiency to a large and lucrative practice. He took an active part in the founding of the Children's Hospital, and for some years served on its Board of Managers. In the efforts made by the Medical Society of the District of Columbia to build a hall for its meetings and the storage of a library, he was one of the leading advocates and financial friends, and although the project failed, the profession retained for him and his exertions in its behalf a kindly recollection.

He was married in 1841 to a Miss Betzold, of Alexandria, by whom he had two children, a son and daughter. Charles only survives. In 1872 he retired from the practice of medicine, removing his sign from the door. He has occasionally since met physicians in consultation in cases of old patients, when strongly urged to do so, but has never assumed charge of a case since. His mental powers to the last seemed as active and strong as in the middle period of life. While he was of delicate constitution, his life was so regular and prudent that he was enabled to perform a great deal of labor. He was a man of marked traits of character; his tenacious memory for details was rarely equaled. He had at the same time an orderly and logical method of reasoning, and was pertinacious in getting direct answers to his questions, put to patients or persons on matters of business. In every-day life he was methodical and exact. He lived well, but not extravagantly, extertained his friends occasionally at his table, and was a capital host.

The Medical Society of the District of Columbia met in special meeting on March 29, and passed resolutions expressive of the esteem in which he was held, and of sympathy for his family, and resolved to attend his funeral in a body. J. M. T.

DR. GEORGE SUTTON.

At a regular meeting of the Dearborn County (Indiana) Medical Society, held in the Court-House in the City of Lawrenceburg on the 29th of June, 1886, the following preamble and resolutions were unanimously adopted, to-wit:

WHEREAS, It has pleased the Great Creator and Ruler of the Universe to remove from our midst our friend, associate and professional brother, Dr. George Sutton, and

WHEREAS, In view of the very great loss this Society has sustained by this event, and in view of the greater loss to the profession at large, and the great loss sustained by the various scientific bodies of which he was an honored member, and still the greater loss to his family and relatives. Therefore be it

Resolved, That it is but a just tribute to his memory to say, that in regretting his removal from our midst, we mourn for one who was in every way worthy of our highest regard as a friend and professional associate, and of the greatest esteem, as a neighbor and a citizen.

Resolved, That we sincerely sympathize with the daughter and son, on this dispensation with which it has pleased Divine Providence to afflict them, and we commend them to Him who orders all things for the best, as He is too wise to err, and too good to do wrong.

Resolved, That a copy of this preamble and these resolutions be spread on the records of this Society, and that a copy be sent to the afflicted family; also a copy be sent to the *Cincinnati Lancet and Clinic*, and to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

A. B. HAINES, M.D.,
R. C. BOND, M.D.,
JAMES LAMB, M.D.,
Committee.

BOOK REVIEWS.

MEDICAL AND SURGICAL DIRECTORY OF THE UNITED STATES. 1455 pp. Detroit: R. L. Polk & Co. 1886.

In this Directory the publishers have supplied a much needed work. It not only gives a list of physicians and surgeons arranged by States, but an immense amount of other information of interest to the profession and those having business relations therewith. It contains the names of nearly 80,000 persons practicing medicine within the United States, conveniently arranged, accompanied by all the information attainable regarding place and time of graduation, etc. A good descriptive article is given with each State list

embodying such matters as location, boundaries, extent in miles and acres, latitude and longitude, statistics regarding climate, temperature, population, rate of mortality, number of deaths from consumption, all medical and charitable institutions, medical societies, and the full text of all State laws relating to the profession. There is also a complete list of all medical colleges, either existing or extinct in the United States and Canada, of officers of the medical departments of the U. S. Army, Navy, Marine Hospital Service and pension department, and a complete directory of the medical journals of the United States.

The publishers have successfully accomplished a work of great magnitude in collecting, correcting and arranging in such an excellent manner the army of doctors belonging to the various pathies in the United States. The arrangement and display of the advertising department is unique, and the general typographical appearance excellent. It is intended to publish the work at regular intervals.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

MILK-POISONING AT LONG BRANCH.—An outbreak of illness from bad milk has recently occurred at Long Branch in the Ocean Wave Hotel. A large number of the guests and attaches were made ill, suffering from vomiting and purging. The proprietor was able to trace the trouble to milk, which had become stale on the dealers hands, and to which he had added chemicals to preserve or freshen it.

THE BRITISH MEDICAL ASSOCIATION AND THE INTERNATIONAL CONGRESS.—A cablegram to the *New York Medical Journal* from Brighton, giving an account of the meeting of the British Medical Association, says: "The American delegation present, including Dr. Davis and others, made a statement before a crowded general meeting in regard to the affairs of the International Medical Congress. The delegates were received with enthusiasm, and their renewed invitation to the members of the Association to visit Washington in 1887 was cordially accepted."

ADULTERATED MILK IN CHICAGO.—The Health Department of the City has found that dealers are skimming and watering the milk put upon the market. Those against whom there is evidence will be arrested and dealt with.

NEBRASKA STATE MEDICAL SOCIETY.—At the late annual meeting of this Society the following officers for the ensuing year were elected:

President, Richard C. Moore, M.D., of Omaha; 1st Vice-President, Milton Lane, M.D., of Lincoln; 2d Vice-President, N. F. Donaldson, M.D., of North Platte; Cor. Sec., H. B. Lowrey, M.D., of Lincoln; Rec. Sec., A. S. von Mansfelde, M.D., of Ashland.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM AUGUST 7, 1886, TO AUGUST 13, 1886.

RETIRED.

Brigadier-General Robert Murray, Surgeon-General U. S. A. August 6, 1886.

Major Wm. D. Wolverton, Surgeon, granted one month's leave of absence, to commence on or about Aug. 15, 1886. (S. O. 104, Div. of the Atlantic, Aug. 7, 1886.)

Major Edwin Bentley, Surgeon, ordered from Dept. Texas to Dept. East.

Capt. D. M. Appel, Asst. Surgeon, ordered from Dept. East to Dept. Texas. (S. O. 179, A. G. O., Aug. 4, 1886.)

Capt. Leonard Y. Loring, Asst. Surgeon, granted leave of absence for one month, on surgeon's certificate of disability, with permission to apply for an extension of two months. (S. O. 59, Div. Pacific, Aug. 2, 1886.)

Capt. Geo. W. Adair, Asst. Surgeon, ordered for duty as Post Surgeon, Ft. Brady, Mich.

First Lieut. Chas. M. Gandy, Asst. Surgeon, granted leave of absence for one month, with permission to apply for one month's extension. (S. O. 103, Div. Atlantic, Aug. 6, 1886).

Capt. James C. Merrill, Asst. Surgeon, assigned to duty as Post Surgeon at Ft. Klamath, Oregon. (S. O. 130, Dept. Col., July 30, 1886.)

Capt. Robert B. Benham, Asst. Surgeon, ordered from temporary duty at Ft. Omaha, Neb., and ordered to Ft. Bridger, Wyo. (S. O. 97, Dept. Platte, Aug. 5, 1886.)

APPOINTMENTS.

To be Asst. Surgeon, with the rank of First Lieutenant:

Henry S. T. Harris, Jan. 5, 1886.

Leonard Wood, Jan. 5, 1886.

William B. Banister, Jan. 26, 1886.

Charles F. Mason, May 5, 1886.

PROMOTIONS.

To be Surgeon, with the rank of Major:

Capt. John H. Bartholf, Asst. Surgeon, Jan. 4, 1886.

Capt. James P. Kimball, Asst. Surgeon, Jan. 24, 1886. (A. G. O., Aug. 2, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 14, 1886.

Walton, Thomas C., Surgeon, to remain on present duty until Sept. 1, 1887.

White, C. H. Surgeon, to remain on present duty until August 21, 1887.

Rush, C. W., P. A. Surgeon, authorized to delay ten days, under orders to Sitka, Alaska.

Lumsden, G. P., P. A. Surgeon, ordered to hospital, Mare Island, Cal.

Baldwin, L. B., P. A. Surgeon, ordered to U. S. S. "Ranger."

Neilson, J. L., Surgeon, detached from the U. S. S. "Ranger," to proceed home and wait orders.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, AUGUST 28, 1886. No. 9.

ADDRESS.

A GENERAL PRACTITIONER'S VIEW OF THE CAUSES AND PREVENTION OF INSANITY.

The Address in Mental Disorders, Delivered at the Thirty-Seventh Annual Meeting of the Medical Society of the State of Pennsylvania, June 3, 1886.

BY JOHN T. CARPENTER, A.M., M.D.,

OF POTTSVILLE, PENNSYLVANIA.

The appointment to deliver the address in mental disorders, which I had the honor to receive at our last session, came to me unsought and undesired. I am as mindful as any of my colleagues can possibly be, how ably this appointment has been filled during previous years—filled by experts in mental disorders, by members of the Association of Medical Superintendents of Insane Asylums, and by recognized authorities in this great Specialty of Medicine. To follow such predecessors on this occasion, in some way that may justify one who is only a general practitioner of medicine, in speaking of what most intimately concerns a select few of his colleagues—and to address this learned body upon a specialty which each of us, for long years past, has been accustomed to consider as under the guardianship of its own appointed medical "keepers"—seems to me difficult of accomplishment, and the very undertaking liable to be considered almost an impertinence. Under these circumstances I must ask your indulgence, reminding you that this duty was imposed upon me by our President, and that I am endeavoring to make a contribution to the common fund of our medical experience, if not in my own chosen direction, at least in the way assigned me. The willing obedience to lawful authority which has always distinguished the members of this Society, must be my excuse and reason for this address.

I propose to make some remarks upon the "Causes and Prevention of Insanity," as seen from the outside point of view of the general practitioner. Most medical men are wont to give thought to these topics—to discuss them with themselves and with their colleagues—on account of the apparent steady increase of mental maladies for years past. To most observing men in the profession the increase of insanity seems out of due proportion to the increase of general disease. An ever greater ratio of the population of our Commonwealth is annually brought under treatment for mental alienation. The number of hospitals has been increased—private institutions have been multiplied—and the number of the insane who are treated in county almshouses does not perceptibly diminish. The causes of the increase of mental disorders require to be carefully sought out, and if possible, remedied. To the average general practitioner the study of prevention seems to be our chief need. To search out the causes of the mischief and eradicate them, seems also to be a duty which we can share with the alienist physicians. In this quarter seems to appear, if not the only, at least the chief hope, in our struggle against the spread of insanity.

The cure of an established mental alienation, by even the best hospital treatment, does not occur in any very satisfactory ratio to the whole number of cases treated. It is feared that the frequently claimed 40 per cent. of cures does not usually result from treatment. I am well satisfied that, of all the cases sent by me (or known by me to have been sent) to hospitals for the insane, in the last thirty years, an average of 20 per cent. would more nearly represent the number who have been restored to mental health and usefulness. Let me repeat the statement in another form, and say that in my own experience, 80 per cent. of the insane whom I have known treated in hospitals, have never recovered. This is a sad commentary on the inefficiency of our best directed efforts. It is a disheartening return of the results of the vast expenditure lavished on our public institutions, where no sanitary or hygienic measures are omitted, and where no medical or surgical skill is spared the afflicted patients.

And if this be true of our admirable public asylums, how much darker a picture could be drawn (and drawn from the life) of their condition and prospects who linger out a forlorn and distracted existence in county almshouses, or in private dwellings—restrained of their liberty, unoccupied, uncheered by social amusements, unheeded too often—a heavy burden, and an illy tolerated curse, upon the household or the community. What a fearful percentage of uncured would we reckon from the class of these unfortunates, if their statistics could be gathered together and read before us to day!

But there is a still more unfortunate class of the insane. Every now and again the sensibilities of our common humanity are shocked, and swift indignation thrills every fibre, at a revelation of cruel bondage and solitary suffering, in squalor, filth and mental misery, of some poor lunatic; hidden away (chained

down perhaps) by a brutal and cowardly keeper, coarsely fed, ill-treated, and subjected to whatever injuries are most calculated to bruitalize and degrade him. Dragged to the light of public knowledge, such wrongs are swiftly ended; but how many similar cases may we not suppose to have never seen the light—how many more such unfortunates, who lived some such existence of misery, and died unrecorded in insane statistics—never to be known till "the books are opened" and the recording angel unfolds the fearful history of their sufferings. In such cases as these, be they many or few, there is no cure. For them there is no percentage of recovery. "Death comes to set them free."

Into such a practical classification as that just given, the insane of our great Commonwealth may be placed, and the medical profession has its special duties with reference to each. The class last-named should not be allowed to exist among us, to disgrace our humanity and civilization. To right the distresses of these sufferers, no exertion should ever be spared. Whenever such cases are discovered, in our daily visitations from house to house, at whatever cost of personal trouble, or even of obloquy, the aid of the law should be invoked, and the power of public opinion be aroused to deliver from worse than death these helpless victims of "man's inhumanity to man." The only measure of our duty is the extent of our ability. When we have done our utmost, at every hazard, then only may we rest content.

The insane of our public institutions are the fortunate recipients of the full measure of the most enlightened methods of treatment and means of cure. We are released from responsibility, as far as they are concerned, when we have secured their admission to the asylum or hospital. Nevertheless we are not relieved from the duty of personal sympathy with their condition. Such frequent inspection of public institutions, and conferences with their medical officers, as will manifest our interest, and refresh our general knowledge of modern methods in the treatment of insanity, are necessary to keep us *en rapport* with that devoted body of medical men, who illustrate the annals of the profession by spending their time, their abilities and their lives in mitigating the direst woes that can befall humanity.

There remain the pauper insane of county almshouses. The late laws enacted for their protection, have need to be rigidly enforced. The inspections of the local boards, appointed to assist the State Board of Charities, are most valuable in this direction. But they should be reinforced, everywhere, by an affiliated committee of the County Medical Society. The insane poor need medical guardianship, and it can not be better afforded than by our County Medical Societies. By regular and by unexpected visitations and reports, and by appeals to the proper authorities, founded on such medical inspections, it will become possible to obtain, under the law, despite the parsimony of Directors of the Poor in such matters all necessary accommodations and means of cure for the pauper insane. It should not be permitted that these unfortunate sufferers be left in careless, unfeeling and unskilled hands. Each county medical society should endorse or condemn as a sacred duty, the men and the methods, by which cure is or is not, successfully conducted. Every county almshouse should be forced to take as good care of its insane inmates as is done in our public hospitals for the insane. This should be the aim. No less should be asked or accepted. And it is for the medical profession to accomplish this great work. It is ours by virtue of our calling, by our humanity, by our knowledge and by our proper leadership in every movement which looks toward the improvement of the physical or mental condition of men. But we must proceed with our main consideration. If we find cure so infrequent, remedies so uncertain, and the increase of mental maladies so progressive, what can be done to prevent their development in the community? Has not insanity evident causes which may be studied to such purpose that, being forewarned, we may also be forearmed against them? It seems to be evident that the study of statistics affords but little aid to this inquiry. They are too imperfect to be reliable, and need to be supplemented by accurate study of each separate case submitted, to become really trustworthy evidence.

The only scientific method would seem to be to regard insanity as a part of the diseases of the nervous system, and to study its causes as related to (and inseparably connected with) those general, constitutional conditions which medical practitioners have learned to recognize as causes of general nervous derangements. The physician who has been accustomed to treat hysteria, epilepsy, hypochondriasis, delirium, spinal and cerebral scleroses, paralysis agitaus, chorea, *et id genus omne*, and who has carefully studied the exciting and the predisposing causes in these other nervous disorders, should be qualified to speak with some authority of the causes of insanity. Related anatomically as they are, by their seat in the nervous tissues, they are also related by virtue of common constitutional causation. For insanity is not a simple or single condition of disease, but under that term is comprised as large a number of diseased states of the brain as is to be found in the general nervous system itself, among diseases which I have just enumerated. It is only because of the predominent symptom of mental defect or disorder, that such varied diseased conditions of the brain are comprehended under the general term, insanity.

What, then, is the most prominent fact which impresses itself on the observation of medical men, as to the causation of nervous diseases? I answer the existence of a family constitution tending to nervous instability, materially influencing the development of the nervous system, and making itself felt by a tendency to degenerative changes in the nervous tissues. Such neurotic diatheses renders its subjects liable to break down under stress of circumstances which would not affect persons of a different constitution. How many of us have been acquainted with families, whose members have illustrated the close relation of nervous diseases, by exhibiting examples of a great many of them within their family circle? Let me cite, by way of example, a father affected with locomotor ataxy, one of his children dying of tubercu-

lar meningitis, another stricken with epilepsy, a third having hysterical hip-joint, a fourth experiencing attacks of aphasia, a fifth becoming a confirmed dipsomaniac, and the sixth a victim of chronic mental disorders. This family was, for a long period, under my personal medical care, and I studied their cases with the greatest interest. Surely there is no difficulty here, in recognizing the correlation of the various nervous diseases with insanity. For such widespread family disaster I found no other common cause than an inherited neurotic diathesis—and there certainly was none. Take another set of cases, also within my own knowledge, which will illustrate this point still further. A mother died of dementia, her son is the victim of chronic alcoholic excess, one daughter died of convulsions, a grandchild has infantile paralysis, a second succumbed to meningitis.

But it seems unnecessary to multiply these family histories. They are well recognized by numbers of general practitioners as proofs of the inherited neurotic diathesis being the chief cause of nervous diseases.

Let us look at another constitutional state as a fruitful cause of insanity, viz. syphilis. Many cases of the so-called general paralysis of the insane are instances (as proved *post-mortem*) of syphilitic disease of the brain. Under the same causation of syphilis may be classed much of the traumatic insanity met with. The chronic slumber of constitutional specific disease is wakened into activity by a blow on the head—the traumatism only being the *exciting* cause. In such instances, the constant headache—the outbreaks of violent rage—the strabismus—the locomotor disturbances—all point to intra-cerebral pressure. Mental disorder soon becomes manifest. Epileptiform convulsions mark the advanced stage. When death allows the cerebral lesions to be investigated, there is often found the syphilitic gumma and degenerative arterial changes, to explain why insanity followed perhaps an apparently trivial injury. In this connection I may refer to Dr. H. C. Wood's paper on "Traumatism as a Cause of Cerebral Syphilis," as a most valuable contribution to our knowledge of the subject.

To make practical use of these truths in the prevention of insanity, if we can treat families with the neurotic diathesis in such a manner as to improve the general health, to strengthen the nervous system, and to remove sources of peripheral irritation, there is reason to hope that many causes of possible insanity may be prevented from becoming effective in such families, under medical care. And, first in order, we must begin with the children. Homes must be regulated under every hygienic precaution. Attention must be paid to the food—personal habits of cleanliness, open-air exercise, and early hours of sleep must be insisted on—and suitable amusements must be provoked for their recreation. Over-work, whether of body or mind, must be avoided. The over-wearied body is an easily sickened body. It responds too readily to depressing influences. It suffers too keenly from external irritations. The over-wearied mind is even a more serious disaster in subjects of the neurotic diathesis. The strain of modern methods of education often needs to be relaxed. The public school system has become too much a children's tyranny. The uniformity of attainment exacted, from weak and strong alike, the prolonged hours of sedentary mental labor, the competitive system of marking and examination, the worry of a feeble mind in trying to study at a rate beyond its capacity, the insufficient time allowed during school hours for recreation and physical exercise, and the mental distress of sensitive, neurotic children under punishment or threats of punishment—all combine to make the system of public school drill and discipline, too often a remorseless engine of mental torture. For the pace must be kept up, the slow must travel with the fast, the weak must wrestle as do the strong, whether it develop or whether it exhaust the fibre.

Above all, therefore, it behooves the family physician in neurotic families to take oversight and authority in educational matters, and to protect the children from the consequences of undue mental work and worry. Then we may expect nervous distress and nervous diseases to diminish among them, and insanity to be often disappointed of a ready prey.

In the case of older members of neurotic families, over-work means also over-worry. Ambition, anxiety, disappointment wear out the fine temper of the mind. A state of unstable equilibrium results, and too often degeneration of brain structure is the result of the unequal struggle, when too long protracted. Given a naturally feeble mental machinery, and the determining causes of its loss of working power are over-work, with consequent diminished periods of necessary rest and recreation. Let every medical man give the utmost attention to the prevention of these exciting causes of brain disease, for they are first in importance. Next to these follow the abuse of stimulants and narcotics, which has much to do among the excitable and irritable American people with the aggravation or even calling into activity the tendencies to insanity. The first abuse of these agents is in their too early use. Boys too soon acquire the habit of indulgence in tobacco. Young men too early habituate themselves to indulgence in alcoholic stimulation which unhinges the mental machinery by direct injury to the brain tissues. Undue excitation brings rapid exhaustion. Local brain congestions, transient though they be, at last induce structural degenerations, and in chronic alcoholism (independently of gouty insanity, which I have had occasion to see) dementia from softening will often be found to occur. Lastly, among the exciting causes which act upon the neurotic constitution to induce insanity, are those which are purely mental as distinguished from physical causes.

In the keen strife for wealth, for political success, and even for livelihood, are to be found many of the events which determine the wreck of the mental forces. Among them we may enumerate the tremendous strain of speculative operations in the stock markets, with their hourly fluctuations in values, unforeseen and unmanageable, which make all the difference between ruin and opulence, between wealth to-day and beggary to-morrow. In the political arena

we can to-day trace the results of a protracted national contest, with its accomplished overthrow of the dominant party, the consequent loss to so many office-holders of place and means of support, while on the other hand, there is eager pursuit of office by numbers of needy men, who only meet bitter disappointment or anxious delay. And in the pursuit of the ordinary means of livelihood we have seen the laboring classes engaged in fierce and protracted contests with their employers— labor and capital at war —under circumstances which inflame the fiercest passions to the utmost tension, and inflict long periods of sorest distress upon the community. All the wear and tear of the cruel mental suffering which these events bring with them, intensified by the mobile and irritable national character, are constantly trying to the utmost the mental endurance of our people. Hundreds go down under the stress of such circumstances, after having experienced the fluctuations of hope, doubt, anguish an despair for weary months— buffeting the waves which finally engulf them, when there is no longer strength left to struggle.

It seems to be timely, in view of all these considerations, for medical men to sound the note of alarm, and to call the attention of those under their influence to the dangers to mental stability involved in American modes of life. Men must be advised to moderate their pursuit of wealth, to put away inordinate ambition, to shun the fierce conflicts of partisan politics, and to avoid being involved in labor disturbances that tend to civil war. We must insist that violent excitements and great anxieties can not be successfully endured, and that the choice of a life which involves constant subjection to those evils is a folly, and may be a crime.

It is well, at this era of our national life, for the doctor of medicine to *be* what his title implies, a teacher; and to combine, as was done in distant ages, the sacred offices of physician and of prophet. It is for our profession to utter prophetic warnings against the habits, the pursuits and the tendencies which unsettle men's minds, and bring misery upon all their future. It is our duty to point out the dangers of excited, overstrained and ill regulated mental habits. And if there be any exhortation more necessary to give than another, it is that men should lead quiet, sober, healthful and peaceable lives, as the great preventive against the increase of insanity. We must advise against indulging in exaggerated modes of thought and expression, against habitual yielding to the excitements of passing events —in fine, against the *hysterical temperament* which seems to be taking fast hold of the American people, and disabling them from seeing things as they really are—making them enjoy feeding on horrors, sensations and exaggerations of every sort—disdaining human nature's daily food, as not appetizing enough for their diseased mental palates. The public press unfortunately, is the ready provider of what they crave. Unsavory news is gathered from every quarter —crimes are recited in disgusted detail; disasters are tricked out with all the ghastly coloring of the skilled chronicler—unclean gossip is not wanting, often unfit to be spoken, much less printed—graphic descriptions of brutal prize fights find a prominent place— political slanders, lies and personal defamation of character are not carefully excluded. All this printed daily, with a full measure of the grotesque and coarse so-called wit and humor, goes to make up the mental food of the average American, not food for making up clean thinkers and honest workers, but tainted as carrion flesh with foulness and decay a fermenting mass, in great part, fitted to keep up the seething process when introduced, and to leaven with its unwholesomeness, a vast number of receptive minds.

Against such brain food every healthy mind revolts and habitually rejects it. But the damage done to the unstable, the weak and the uncultivated can not be estimated. To them the newspaper is a revelation of life. They study and gloat over its worst details. The dramatically presented crimes have a horrible fascination, which may become potent in drawing by imitation and suggestion, many an unstable mind into their commission. The uncultivated and undisciplined drink in the subtile poison of sensationalism as if it were wholesome food. They "read, mark, learn and inwardly digest" it. The unreal, the false and the exaggerated are the staple of their daily thinking. Their standard of morals is lowered by continual mental contact with what is debased and criminal. Habits of truthfulness, thoughtfulness and earnestness are impaired. Emotional excesses are encouraged and self-control becomes fatally weakened. In fine, the American criminal, and the American "crank" are mental recipients from the daily press of much that is best fitted to aggravate and increase their inborn tendencies to evil. And the American people is daily imbibing what is surely calculated to develop and establish what I have called the "hysterical temperament" among them. Who will reform the sensationalism of the daily press? That man will deserve the everlasting gratitude of his countrymen.

Gentlemen, in this necessarily limited Address it would be impossible to do more than touch upon a limited number of the causes which may excite mental disorders in constitutions already prepared for their developement. I have accomplished the purpose in view in writing this paper, if I have succeeded in calling the attention of my fellow practitioners of medicine to their opportunities, in those families committed to their charge, of averting mental disasters and mental ruin, by the simple method of attention to their education, to their habits and their surroundings.

ORIGINAL ARTICLES.

GALVANO-CAUTERY IN DISEASES OF THE PROSTATE, BLADDER AND URETHRA.[1]

BY ROBERT NEWMAN, M.D.,
OF NEW YORK.

Hypertrophy of the prostate gland is a disease from which most old men suffer. The gradual ad-

[1] Read in the Surgical Section, at the Thirty-Seventh Annual Meeting of the American Medical Association.

vance of the malady and its unavoidable complications, such as spasms of the bladder, retention by mechanical obstruction, cystitis, dilatation of the ureters, pyonephrosis and uræmia, make life a burden. A large majority of these sufferers succumb prematurely.

No rational treatment has thus far been adopted for the cure of this disease. Volumes have been written on the subject. Various methods have been suggested for the amelioration of the trouble and allaying of actual pain. A few cases have been reported as cured, either by injections, destruction, incision, enucleation, prostatotomy, etc., but no successful method of cure has been determined. Radical cures by surgery have been very few, most patients having died shortly after the operation. The great importance of establishing a method for the *radical* cure of the enlarged prostate no one can gainsay.

For the last five years I have endeavored to apply galvano-cautery directly to the hypertrophied prostate, but was unable to, from lack of a suitable instrument. Mechanics when consulted shook their heads, failed to construct the desired instrument or carry out my plans, and some declared it impossible to make my ideal instrument.

True, many difficulties had to be overcome. A smooth sound was needed of small size, easy of introduction to the spot to be cauterized. Both insulated poles had to be placed in the interior of this instrument, and the mechanism so arranged that the platinum could be heated to the desired degree instantaneously, with certainty and beyond possibility of failure. The cautery, its beginning, duration and ending, as well as the quantity used, must be under the absolute control of the operator. The platinum burner must not, in its entire length, touch anything, the heat must be concentrated, and not approach the surrounding parts of the instrument; the connections must be perfect and act promptly. The instrument must be light, small, handy, have the correct curve, and so arranged that the operator can manage the entire procedure without an assistant. The entire mechanism must be placed within the limited space of a No. 18 French scale sized tube. Next we must have a battery, so constructed as to give a certain quantity of electricity of a fixed potential, suited to the work to be done and the instrument; too high a potential will melt the platinum wires or cut the tissues like a razor; on the other hand, too low a potential will fail to heat the wire or not be effective. Therefore it is imperative to measure the electricity necessary for our work and instrument; for the same quantity of electricity under the same circumstances will always do the same work.

To fulfil these requirements in the construction of the instrument, was a difficulty which was overcome only by six months' constant hard work, trials, vexations, experiments, drawings and models, by myself and Dr. L. Drescher, to whose skill and labor I am largely indebted for the perfection of my idea. I am much pleased to exhibit and demonstrate here the result—*the galvano-cautery sound.*

The instrument is in the shape of a catheter, of smooth, polished metal, with a short curve. At the end of its convexity is a fenestrum, in which is placed a platinum wire to be heated. This wire may be shaped differently, either straight, curved or serpentine, in order to get more or less surface cautery. The other end of the instrument is straight and forms the handle; from this end emerge two wires, the heat conductors, each of which is connected by binding screws to electrode wires, which respectively go to the positive and negative pole of the battery. The current-breaker is attached to one pole at the handle.

Any good galvano-cautery battery may be used with the instrument, but it is necessary, as before stated, to so regulate the battery that it yields the exact electrical potential to be used for the operation. I use a Dawson battery, which works to my entire satisfaction. Experiments are necessary to establish the standard. The heat must be of a high red color, just short of white heat, the instant the current-breaker is touched; this heat must be kept while the wire is in contact with the mucous lining. Less electricity is required to heat a free wire in dry air than to heat a wire held against a moist surface. The strength of the fluid is adjusted according to these requirements; the elements are immersed in the fluid to a certain depth, the electrode wires are regulated with regard to their size, length, etc.

Having determined these requirements for the operation, there will be no further trouble. It is a certainty that, in the near future, every scientific instrument-maker will construct his apparatus with the graduated measure needed, attached and regulated, so that the operator can use any measure desired. We can also use the storage-battery, consisting of a series of cells, which answers our purpose as well as for electrical illumination. This battery, once adjusted with reference to the quantity needed, works with equal power and steadiness till the stored electricity is exhausted. The last of its electricity has the same effect as the first. This instrument, though portable, is rather heavy. We may use the dynamo machine, which can be operated by hand, foot, hydraulic pressure or steam according to construction and desire. Such machine I have seen here in St. Louis at the store of Mr. A. S. Aloe (cor. 4th and Olive streets).

I repeat, no matter what kind of a machine is used, a fixed measure of electricity is necessary. You will see its action in some of the experiments; beginning with one flash of light, to be followed by several quick flashes. You have observed that the flash is simultaneous with the connection, which is important and absolutely necessary. If the wire is heated slowly, becoming warm and gradually hotter, till the desired heat is obtained, it shows that the instrument is faulty in its construction, consequently must be imperfect in its action. In experimenting with the instrument on mucous linings, we find that a galvano-caustic application of the same power acts differently according to the length of time of contact with the tissues. Thus the effects can be regulated from a light blush to the total destruction, or even amputation of the tissues.

It is a mistaken idea of many, that the galvano-cautery necessarily burns, destroys, and is followed

by cicatricial tissue. Nevertheless, this is a favorite objection of some ignorant persons and enemies of electricity. If the operator bungles, or wishes to destroy, he can, but the expert will not. It is well known that eminent neurologists apply galvano-caustic directly to the faces of young ladies, without ever causing marks. All depends on the manner of application. Even deeper applications on mucous linings may cauterize without destroying. Voltolini, Carl Michel, Shurly and Yemans, of Detroit, and many others, have applied the cautery to the nasal and pharyngeal cavities with great success. Therefore it is evident that different methods can be instituted with the instrument, and applied for various purposes to different parts.

We will now consider the application to the "enlarged prostate." Patients suffer more or less from this disease; they may be perambulant or in bed, or divide their time between bed and room; the hypertrophy may be small or extend to the size of an egg, or even an orange. Complications and pain may add beyond endurance to the sufferings. According to the state and circumstances the treatment must be selected, and the method applied. As some cases are beyond cure, the prognosis must be given cautiously, and according to the state of the patient.

The treatment which I prefer, and am now practicing, and alone recommend, and which has done good service, is the *slow* (regular) *method*. This means, give the enlarged gland a short application, from a moment to three seconds' duration; this causes not more than a white film similar to the effect of nitrate of silver, in the treatment of Desormeaux. The *modus operandi* is as follows: The instrument is connected with the electrode wires, which are then attached to the battery. The fluid in the cells must be of the right standard, and all the machinery in perfect order. When all is ready, I invariably let the cells down and try the instrument with a short flash. No matter what assurance I have of the perfection of the appliances, this little experiment excludes any possible failure. The prostatic portion to which the cautery is to be applied must have been ascertained, and the distance from the meatus measured. This distance is then marked on the instrument by a small rubber band. The patient, according to his preference, may stand erect, be on an operating table or in bed. The instrument is then introduced so that the fenestrum with its platinum wire is in contact with the part to be cauterized. The operator will know by touch when the instrument is in the right place, and the measure will corroborate the correctness of the situation. One hand holds the instrument and the other sets the battery in motion, and then touches the little spring to connect the interruptor, a flash follows, the finger disconnects the current. In one moment the operation is done, and the instrument is withdrawn. It causes no pain, and in some instances the patient scarcely believes that anything has been done. He is able to walk about and is not detained from business. In cases of very irritable patients, I have used cocaine injections, but it was scarcely necessary. The séance should be repeated in about three days, or even in two. The instrument must be kept scrupulously clean, as the cautery will fail, if there is dirt between the connections.

The question now arises, how does this method bring about a cure? The end sought is, first to remove the obstruction, so that the bladder can discharge all the urine, and at regular intervals; and then, in order to make the cure radical, to reduce the prostate to its normal size. The theory is that the cautery first acts as a tonic and next as an astringent; the mucous lining shrivels up, the glandular tissue contracts, and by shrinkage the size is diminished. The stimulation gives new life and healthy action. Each repetition of the operation acts similarly, and perhaps on another part of the hypertrophy. The operation must be continued till the cure is effected. Care must be taken not to over-stimulate, and cause prostatorrhœa, prostatitis, etc., thereby creating or aggravating the very ailment we seek to cure. The cautery must be given just severely enough to accomplish the object and no more. If the cauterization is too prolonged, and too deep, the glandular action is overtaxed and weakened and will be followed by a terrible prostatorrhœa, which takes a long time to cure. At the same time an inflammation is created, which causes pain and swelling, and at last, the too greatly cauterized tissue will slough away and may cause septicæmia.

For these reasons, I prefer the slow method described, and am opposed to rapid methods, or too deep cauterizations.

The practical workings I judge by analogy, from observations of the cautery in hypertrophied tonsils. Great similarity of anatomical structure exists between the tonsils and the prostatic gland—both are glandular organs, covered by mucous lining, having epithelium; both are secretory organs, having ducts, follicles, canals, and one twelve to fifteen orifices and the other twelve to twenty small excretory ducts. In hypertrophy of the tonsils, after other remedies had failed, I succeeded by using galvano-cautery with this same instrument. The application was made in cases of children of very tender age, who stood free before me, and without any aid or force opened the mouth, and went through the operation without flinching. Not one complained of pain, all came back to have the cautery repeated, and then stood still with more confidence than at first. In these cases the immediate effect was a splendid illumination of the whole buccal cavity, and a white film was seen on the tonsil after withdrawing the instrument. The cautery could be repeated in two or three days; in one case it was done the next day. Sometimes the cautery was repeated in the same place, at other times, from preference, an adjoining place on the tonsils was selected. Almost daily observations of this series of cases convinced me that the galvano-cautery acted practically just as I have theoretically described. The patients were benefited, the tonsils diminished in size, and a cure effected. It was remarkable how soon the mucous lining regained its normal color, and when a deeper cauterization was used, there was no unpleasant slough, only a patch was observable, like in appearance to follicular ton-

sillitis. The instrument was well adapted for the tonsils, the curve suited exactly, the fenestrum could be held against the exact place to be cauterized, without possibility of burning any other part by accident.

In treatment of the enlarged prostate by galvano-cautery, it is absolutely necessary to pay attention to other symptoms and troubles of the patient, according to established principles. Pain must at all hazards be allayed; this I generally accomplish by rectal suppositories. Chas. Mitchell, of Philadelphia, prepared for me some gelatine articles which act very well. In medication I rely mostly on belladonna. The bowels must be kept regular, since constipation adds considerably to the inflammation, and by pressure causes pain. While the galvano-cautery is used, it is of the greatest importance to attend to the state of the bladder by drawing off the urine and washing the bladder out.

Another possible method, which I call the *rapid*, consists in the destruction of the obstructive part of the prostate in one séance. This is done by holding the cautery on the offending part till the cautery has burned it down and made room for the passage of the urine. The objections to this method are the immediate shock, followed by pain and inflammation, which generally cause a new obstruction, partly by spasm of the bladder and partly by the débris of the destroyed gland. There is even danger of septicæmia. At best the patient is kept in bed, in pain and anxiety, for a long time. Prof. Bottini, of Pavia, practised a similar operation with ultimate success. He constructed his own instrument, and kept up the cautery forty-five seconds. The patient was kept in bed afterwards, and on the twenty-fourth day for the first time passed water voluntarily. It took six months before he was cured. While I admire the zeal of Bottini, I scarcely think his method will become popular.

Another method is the *radical*. It consists of perineal section, and at the same time the total destruction of the hypertrophied part of the prostate by galvano-cautery. This can be done with my instrument, either per urethram, per perineum, or by a larger galvano-cautery burner, or by the galvano-sling. The after-treatment consists in diligently washing out the bladder, using disinfectants, and keeping a catheter in the perineal wound. I would not hesitate to perform this latter operation, if indicated; that is, if the patient had no other chance, if it would be a risk to wait for any other procedure, and particularly if the case is complicated with strictures and consequently too violent spasms of the bladder.

A few days ago a man came under my observation, in whose case this operation would have been the only rational procedure. He had several strictures, admitting no larger sound than a No. 11 French scale, he had a calculus in the bladder, a perineal fistula, and hypertrophy of the prostate; was weak, in pain, and run down constitutionally. With such complications perineal section is the only known rational operation; in fact, no other would fulfil the indications.

Galvano-cautery has advantages over the knife, it avoids hæmorrhage and leaves no raw surface to heal. The cautery protects the amputated surface with a scab, under which the healing process takes place.

Other Uses of the Instrument.—Though my instrument was constructed for the prostate, it has done good service in other diseases, which I will briefly mention.

Spermatorrhœa.—This disease is rare, but one genuine case was treated by applying the cautery to the ejaculatory ducts at 6⅜ inches from the meatus. The applications were repeated once a week.

Impotence.—In several cases the galvano-cautery was applied to different places, such as prostate, Cowper's glands and ejaculatory ducts. The treatment was aided by other means.

In diseases of the bladder the instrument has worked admirably, particularly in villous tumor with hæmaturia, and in traumatic ulcer of the neck of the bladder. The patient had been injured, and a ragged wound near the neck of the bladder was transformed into a chronic ulcer. The place could be felt by the introduction of the instrument, the patient himself could give the best information when any instrument came in contact with the ulcer. One patient, weakened by years of constant hæmaturia, passed no bloody urine after the first application of the cautery.

Urethral granulations, *denuded surfaces*, and *ulcers* readily yield to the galvano-caustic treatment. Frequently patients present themselves to be treated for a chronic discharge, some call it leakage. I consider it error to assert that all chronic discharges of the urethra spring from strictures. On the contrary, I often find that when strictures are radically cured, the old troublesome discharge remains.

For twenty years I have treated such cases by local application through the endoscope. Generally we find chronic granulations, which yield to local, circumscribed applications of nitrate of silver, repeated at intervals. Sometimes we find denuded surfaces, which bleed at touch, sometimes chronic congestions, and even ulcers. With these affections the galvano-caustic has done better and cured quicker than the old method. The endoscope is needed to diagnosticate and locate the diseased spot.

Dr. Louis Sass treats *urethral strictures* by galvano-caustic, with an instrument he himself constructed.

I reiterate, my instrument was designed expressly for treatment of the enlarged prostate. I have used it since October, 1885. During those six months of use it fulfilled its purpose, and was useful in a variety of other diseases as stated. Detailed clinical histories of cases are not now given, for many reasons. Six months' work with a new instrument does not warrant in alleging an established method, or in giving reliable statistics or forming undeniable conclusions.

While the instrument has so far given me satisfactory results, yet more time is needed for observation, in order to give accurate statements and form fixed opinions. The time here allotted for reading a paper excludes a more extended statement. I hope that in the future I shall be able to complete the statistics of my new method.

The sole object of this paper is to introduce and

explain to the profession my new instrument, and to establish my method of treatment of hypertophy of the prostate.

68 W. 35th St., New York, May, 1886.

OPERATIONS ON THE DRUM-HEAD FOR IMPAIRED HEARING; WITH FOURTEEN CASES.[1]

BY SETH S. BISHOP, M.D.,

OF CHICAGO.

ATTENDING SURGEON TO THE ILLINOIS CHARITABLE EYE AND EAR INFIRMARY, AND TO THE SOUTH SIDE FREE DISPENSARY.

I will not occupy the time of the Section with a historical account of this operation, although it is replete with interest. Those facts only will be presented which are necessary to an intelligent study of this group of cases. The subjects for operation were not selected with a view to the promising nature of their cases. This method would have been more brilliant but less scientific.

If I have erred at all it has been in the opposite direction. For the purpose of making a crucial test of the efficacy of this procedure, I have made it the last resort in those cases which afforded no hope for relief from any other treatment. Perhaps the propriety of operating on those patients that seemed to promise no results might be questioned, were it not for the facts that in nearly all of them there was an unexpected improvement, and that no unfortunate consequences followed the operation. The cases I have chosen to operate on were far more hopeless than those with chronic suppurative inflammation. The consideration that the former respond so little to our efforts, while the latter are so amenable to treatment with inflations, cleansing, peroxide of hydrogen, boracic acid, bichloride of mercury, etc., with the result of not only arresting the disease, but of improving the hearing, has led me to seriously contemplate the advisability of establishing the suppurative process in proliferous inflammation of the middle ear. In but three cases in my practice has this condition followed the procedure under discussion, and I have operated more than one hundred times. It happened while I was preparing this paper. A temporary purulent discharge occurred immediately after the operations. It had the effect of keeping open the apertures, and no evil consequences followed.

In choosing the location for the incisions I have usually given preference to the section of membrane anterior to the handle of the malleus, in order to avoid the possibility of wounding the carotid artery, should the bony wall of the carotid canal be deficient, or of penetrating the labyrinth through the fenestra ovalis.

Cocaine in a four per cent. solution was employed as a local anæsthetic in very sensitive individuals. It allows sufficient deliberation on the part of the operator, for patients experience no actual pain, although they feel the knife.

Chronic non-suppurative inflammation of the middle ear existed in all of the following cases.

Case 1.—Male, 43 years old, on Board of Trade. Said he had not been able to hear with the right ear for many years. He consulted me relative to a sudden attack of sub-acute inflammation of the left middle ear and Eustachian tube. The right drum-head was thickened, opaque, and retracted. The handle of the malleus was fore-shortened and the processus brevis prominent. There was no hearing for the watch even by bone conduction, but the tuning-fork could be heard by aerial conduction close to the auricle. I advised him to submit to an operation; but as he had no hope of receiving any benefit for his worse ear, and requested me to direct my efforts toward the better ear only, to save what hearing he had, I contented myself at first with the ordinary treatment addressed to both ears. The left ear improved rapidly, while the right remained unaffected. Before discharging him I instilled a warm four per cent. solution of cocaine into his right ear, and at the expiration of twelve minutes made a free opening in the anterior half of the membrana tympani, with Politzer's paracentesis knife. He was not conscious that any cutting was done, and gave no evidence of any unpleasant sensation, except by the remark that "The funnel seemed to press against the ear." The immediate result was that he heard my watch on contact with the auricle, and the tuning-fork five inches distant. He said it was the first time in many years that he had heard a watch with that ear. April 29th he could still hear the watch with that ear.

Case 2.—Deaf mute, German farmer boy, 19 years old, came under treatment in September, 1885, during my service at the Illinois Charitable Eye and Ear Infirmary. There was no sign of any perception of sound either by aerial or bone conduction with either ear. I placed him on a course of treatment addressed to both the middle and internal ears. For the former I employed catheterism at first, and the Politzer method later, as the Eustachian tubes became more pervious. For the purpose of imparting tone to the auditory nerves, I employed central galvanization daily. After four months of persistence in these methods, the only apparent improvement was his ability to hear the tuning-fork as it vibrated in contact with the mastoid process of the right side. I repeatedly tested his hearing in the presence of others, but he was unable to hear loud clapping of hands immediately behind the auricles.

January 28th I opened both drum-heads, leaving elliptic perforations which remained open two or three days. My record book shows the immediate result to have been as follows: Patient hears the loud voice through the conversation tube, but does not understand words. He makes an effort to reply, but the result is only unintelligible gibberish. In speaking to him through the tube, care is taken to prevent him from watching the lips, for he has acquired some proficiency in lip-reading. He repeats the vowel sounds with more or less accuracy, and if given an opportunity to watch the relative positions and movements of the lips, tongue and teeth, he reproduces the sounds with surprising fidelity.

February 1st, the aperture having closed, I opened the right membrane. Patient hears ordinary conversational tone through the tube, repeating words.

---

[1] Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Seventh Annual Meeting of the Am. Med. Association.

February 8th, made long openings in both membranes. I have taken pains to exercise the auditory apparatus by using the vowel sounds and the powers of the consonants separately. He says he hears better with both ears, and seems to appreciate various sounds with greater nicety than before.

February 11th, 17th, and 27th, opened both drum-heads. Patient says he hears my watch on pressure with right ear, and imitates the ticking. He hears the fork close to the right meatus. At the last operation I made two incisions in such a manner as to leave triangular openings. I waited nearly a month before operating again, continuing the inflations and galvanization. The perforation on the left side had then closed, but on the right it remained open.

March 25th, made long aperture in both drum-heads. Hears watch on contact, and fork one inch, with right ear.

March 30th, operated on both drum-heads, making two incisions in each, so as to embrace large triangular portions of the membrane. He is now able to construct and utter sentences of considerable length quite intelligibly.

Encouraged by the improvement in the preceding case, I adopted the same course of treatment in the the following one. It is in striking contrast with the first, and illustrates the impossibility of predicting results.

Case 3.—Farmer, 25 years old. December 11th, 1885, said he had been losing his hearing for "a number of years." There were evidences of disease of the labyrinth, but no syphilitic history could be elicited. Neither the watch nor fork was heard by bone conduction with either ear, but he could hear the fork one inch from the right meatus. There had never been any tinnitus aurium. His treatment was exactly the same as in Case 2. Central galvanization and inflations failing to accomplish anything for him up to January 27, 1886, I opened the right drum-head, with no result.

February 3d, operated on the left one, with no improvement.

February 12th and 17th, and March 4th, operated on both drum-heads. When I discharged him he said there was no perceptible change of any kind in his condition.

Case 4.—Brought for consultation by Dr. Bennett, from Richmond, Illinois, on February 5, 1886. The patient was a young woman 19 years old, and had suffered for "several years." The tympanic membranes were thickened, opaque and retracted. She could not hear the watch, and could hear the fork only when in contact with the mastoid process. Symptoms were present which pointed strongly to labyrinthine disease. No satisfactory results had attended the ordinary treatment. I made free openings in the drum-heads with the immediate result that she heard the fork at a distance of ten inches from either ear. The patient returned home with her physician, who promised to keep a record of her case and report the results to me.

March 23d I received a letter from Dr. Bennett in which he stated, after referring to my operation, that "Since then I have punctured one drum-head twice and the other once. She seemed better after each puncture, but now has reached a stationary period where she does not improve. I am inflating the middle ear with the catheter once a week, and applying the galvanic current. What would you further advise?" etc.

Case 5.—Cooper, 36 years old. Has had great tinnitus in both ears for two years. The drum-heads were opaque, thickened and retracted. Hearing for the watch was on pressure for the right, nil for the left. Fork was heard one-fourth inch from the right ear, and on contact with the left mastoid process. After the operation he could hear the watch two and one-half inches, and the fork ten inches with the right ear, the the watch seven inches with the left. The tinnitus ceased in the right ear and diminished by seventy-five per cent. in the left.

Case 6.—Woman, æt. 42. Has suffered greatly from noises in both ears. Heard watch on contact with the right ear, and on pressure with the left.

February 18th, opened both drum-heads. Watch was heard two inches from the right ear. Hearing remained the same as before in the left, although she thought it was better. The tinnitus, which was increasing before, now intermits, and is less annoying.

February 20th, hears watch two and one-half inches from right ear. Hearing unchanged in left ear. Tinnitus diminished in both.

February 27th, hearing distance for watch on right side, a little more than five inches. No change in left ear. Tinnitus less in both. The improvement in the hearing distance for the right ear was more than 500 per cent.

Case 7.—Woman, 50 years old. Proliferous inflammation of long duration. Hearing for watch on right side, nil, on left side, pressure; for fork on right side, one-half inch.

March 28th, opened both drum-heads; immediate result, nil.

March 29th, both apertures remain open. Hears fork four inches from right ear, and watch on contact with left. The improvement in the right ear was 800 per cent.

Case 8.—A woman about 40 years old came from the country for consultation. She attributed her trouble to the use of quinine. Said she had taken it during a year for intermittent fever, which she had about fifteen years ago. Ever since then her ears have rung constantly. She had typhoid fever nine years ago. The group of symptoms were characteristic of proliferous inflammation. Hearing for watch was on contact for the right ear, one-eighth inch for the left. I opened both membranes, whereupon she heard the watch one-eighth inch from the right, and one-half inch from the left. The tinnitus had diminished.

Case 9.—Iron worker, 45 years old. Hearing of the right ear for watch, nil; for fork, at rim of auricle. Hears watch in left ear on pressure, and fork, one inch. Operated on right ear, with the immediate result that he heard the fork one-half inch distant. Two days later the hearing had improved so much that he heard the fork two inches from the auricle, and the snapping of the nails six inches.

Case 10.—Horseman, 50 years old, whom I had treated several months in the South Side Free Dispensary, by catheterism and Politzer's method, without any perceptible permanent improvement. The drum-heads were greatly thickened, and densely opaque. The manubrium was much foreshortened, and there were cretaceous deposits in both membranes. As in many such cases, there was a chronic naso-pharyngeal catarrh which was quite intractable. There was absolutely no hearing for the fork or watch. The disease had evidently invaded the labyrinth. Although there appeared to be no reason to expect any improvement, since I had never witnessed any ill consequences following the operation, I opened both drum-heads. It was like cutting through leather, so thick and hard and tough were the membranes. The chalky deposit imparted a grating sensation to the fingers that held the knife. He strongly insisted that the operation not only improved his hearing, but relieved the uncomfortable sensations in his head. No later history was obtainable.

Case 11.—Laborer, 51 years old. Had tinnitus of long duration. There was inspissated cerumen in the left meatus when he presented himself at my clinic at the Infirmary in July, 1885. Hearing for the watch then was one-fourth inch for the right ear, and pressure for the left. After eight months of the usual treatment the hearing distance had increased by four times the original distance in the right ear, and from bone to aerial conduction, at one-half inch distance, in the left. But there it remained without further progress until March 29, 1886, when I opened both drum-heads with triangular apertures. Immediately the hearing distance was increased in the proportion, in the right ear, of two to seven, and in the left ear it was doubled.

Case 12.—Man, 27 years old. Had a fall when four years old and alighted on the left parietal eminence. Says he has been deaf in the left ear ever since. Has had noises in both ears for eight years. Inspection revealed proliferous inflammation in both middle ears, and I strongly suspect that there had been a fracture of the temporal bone, extending through the left tympanic cavity. There was no hearing for the watch, and the fork could be heard only when vibrating loudly on either mastoid process. I made large openings in the drum-heads, whereupon he could hear the fork by aerial conduction one and one-half inch from the right ear, and one inch from the left. The tinnitus remained undiminished.

Case 13.—Old soldier, 54 years of age. His affliction dates from the battle of Pittsburgh Landing, where he was precipitated by the explosion of a shell. Thus his disease is over twenty years old. There was no hearing for the fork. The inflammation was of a proliferous type, and the auditory nerves were diseased, beyond a reasonable doubt. There were noises in both ears. As there was no improvement from the usual treatment, I opened both drum-heads, merely to see what the result would be. It seemed to have no effect on the right ear, except to diminish the tinnitus, but he was able to hear the fork close to the tragus on the left side. Four days later the tinnitus had ceased, and the hearing remained the same for the fork. He repeatedly assured me that he could hear better, and said his "head felt clearer and better" for the operation. He said he could hear some with the left ear. I doubt it. I saw the patient several times subsequently, and to my surprise, when I last saw him, he retained the improvement he had made.

Case 14.—Swedish workman, 35 years old. Had tinnitus one and one-half year in the right ear, and two and one-half in the left. No hearing for watch. Fork heard one-half inch from right, and one-eighth inch from left ear.

March 29th.—I made large openings in the membranes, after which he could hear the watch on contact with the right ear, but not with the left. Hearing for the fork was increased just fourfold for both ears. The tinnitus was diminished.

March 30th.—The hearing was five times better in the right ear, and eight times better in the left, than it was just after the operation, and the tinnitus was further decreased.

April 22.—Hears watch one inch with the right ear, and on contact with the left. Tinnitus is diminished by one-half in the right ear, but remains the same in the left. I operated on both ears again, whereupon the hearing was less acute, and the tinnitus was diminished.

April 29th.—Hearing for the watch was one-half inch for the right ear, and contact for the left. There was slight tinnitus in both ears.

The watch employed for testing the hearing can be heard sixty inches by the normal ear, and the tuning-fork is of ordinary size, pitched at *a* above middle *c*.

In recapitulating it will be observed that only two out of these fourteen cases were under 25 years of age. One of these was a deaf mute and the other presented symptoms of labyrinthine disease. All except two of the remaining twelve were 35 or older. Four were 40 or more, and four were 50 or over. The average age was above 38 years. It should not be forgotten that the conditions for which these operations were performed were among those generally regarded as the most hopelessly incurable that ever confronted an aurist. Notwithstanding this, thirteen out of the fourteen cases were more or less benefited, and some were improved by not less than 500 and 800 per cent. How permanent this improvement may prove to be remains for the future to determine, I give the facts as far as they are in my possession.

The history of these cases has been brought down to as recent a date as the nature of circumstances would permit. I have examined and operated on some of them within the last week. I have had as yet no reason to regret the operation, and in some cases of this group, as well as in others which there is not time to report at this meeting, the improvement has been greater than I was prepared to expect. I shall follow up the history of all cases as far as possible and record remote results. My object in operating was to cause cicatrices in retracted drum heads, for the purpose of restoring their normal tension through contraction of the cicatricial tissue. But when the loss of hearing seemed to be due largely

to the interposition of a thick, dense, unyielding drum head between the source of sound waves and the perceptive apparatus, I attempted to maintain a permanent aperture.

In conclusion I must say that the happy results obtained in the majority of cases in which I have operated, and the fact that no ill consequences have followed the operation, have convinced me that the procedure is advisable in the class of cases I have selected. It improves hearing, and sometimes relieves distressing noises and other subjective symptoms when nothing else will.

719 W. Adams St., Chicago.

MEDICAL PROGRESS.

BADAL'S OPERATION, OR LACERATION OF THE INFRA-TROCHLEAR NERVE FOR THE RELIEF OF GLAUCOMA.—DR. J. S. PROUT, of Brooklyn, in an article on this subject says: The laceration (*arrachement*) of the infra-trochlear nerve (*nerf nasal externe*) has been proposed by Badal, of Bordeaux, for the relief of ciliary pain from various causes, among them any pathological condition that may induce hardness of the eyeball.

In order to find it we need only to lay the index finger, palmar surface forward, on the globe immediately below the brow, the extremity of the nail resting on the side of the nose; the upper half of the free margin of the nail will then cross its course as it emerges from the orbit. It and its accompanying arteriole may often be felt as a very small soft cord about half way between the pulley and the upper margin of the tendon of the orbicularis muscle. A curved incision three-fourths of an inch long, as indicated by the position of the finger nail, will suffice for its exposure. It is small, soft, not readily distinguished from its surroundings and may easily be divided in the search for it, but fortunately it is not necessary to carefully isolate it. After having cut through the integument and the muscular layer the subjacent connective tissue may be separated by two strabismus hooks, one of which is then to be passed under the nerve and its accompanying arteriole from below upward, scraping the periosteum, *on which it lies*, as one takes up the tendon in a strabotomy. The tissue on the hook is lacerated by pulling with a very moderate degree of force directly forward. Half an inch of the nerve may thus be drawn out and afterward cut off. The hæmorrhage from the ruptured arteriole is slight and easily controllable. The wound is to be closed by sutures, and any simple dressing applied that will keep the lids quiet. Except cleanliness "antiseptic precautions" are not necessary. Healing is almost always by immediate union. In forty-eight hours the sutures may be removed. In some cases small tender nodules have remained after healing was complete.

Badal at first used chloroform, as he carefully isolated the nerve, but in his latter operations he used no anæsthetic, as the time required is very short and the pain sharp only when the nerve is ruptured. How the laceration of this nerve reacts on the nutrition and sensation of the eye, Badal does not attempt to explain, but refers to the well-known fact that such operations practised on the peri-orbital nerves do exert a therapeutic action not only against the symptom pain, but also against vaso-motor and secretory disturbances. Besides, it does not matter to the surgeon whether it is by a direct action on the nerve or by a simple reflex action. It is not enough to *cut* the nerve, it must be *stretched and torn, lacerated*, so that the action, if a direct one on the tissue, may be propagated backwards as far as possible in the line of the nasal nerve. In his last paper Badal gives his clinical results based on eighteen patients with glaucomatous disease, on whom he lacerated the infra-trochlear nerve twenty times. They were not selected cases. At first iridectomy, sclerotomy and laceration were done somewhat indifferently, but the last-named operation was done on all his later cases. He calls especial attention to the fact, as one of its decided advantages, that this operation, as it does not attack the globe of the eye, is accepted much more willingly by the patient than iridectomy or sclerotomy. Four consented to an operation only on a formal promise that the eyeball should not be touched.

He says it has never aggravated the condition of the patient, and, without exception, the laceration of the nerve has relieved the pain, often immediately; some patients have suffered until the next day. An operation not involving the eyeball could not be expected to cause a rapid diminution of the tension, and in this particular it is inferior to sclerotomy or iridectomy, but in some cases the tension did diminish quite rapidly, in others slowly, in some no effect was produced. In cases where it has failed no better result has been obtained from iridectomy or sclerotomy done later. On the other hand in a number of cases where these operations had given no results, laceration had succeeded. Abadie has proposed to combine it with one or other of them, but Badal thinks that in severe cases, when a delay of only a few hours may be followed by total loss of vision, a paracentesis of the cornea will relieve the tension, which condition the laceration will then maintain. As far as he can judge it has a value in improving vision at least equal to the other operations.

These are the results of his twenty operations on eighteen patients (nearly all of whom were unpromising for any operation): *Pain* was relieved at once in ten, rapidly in one, gradually in five, not stated in four. *Tension* was relieved quickly in four, gradually in eight, not relieved in six, not stated in two. *Sight* had long been lost in seven, was improved in four, not stated in five.

At the meeting of the Ophthalmological Society of the United Kingdom of April 8, of this year, Mr. Spencer Watson reported that he had trephined the sclera in a case of hæmorrhagic glaucoma. Mr. Brailey said that in such hopeless cases, the best treatment was to stretch the *supra*-trochlear nerve. Mr. McHardy spoke of the ease with which the *supra*-trochlear nerve can be found in the living subject. Mr. E. Browne in two cases had obtained no dimin-

ution of tension from stretching the *supra*-trochlear nerve.

As the *supra*--trochlear nerve is a branch of the *frontal*, and, consequently, much less directly connected with the nervous supply of the eye-ball than the *infra*-trochlear and no more easily found or operated on, it is difficult to see why it should be chosen for *stretching* in preference to the latter.

I have performed laceration of the infra-trochlear nerve nine times on five patients, all so unpromising that the very small chances of success from any operation on the eyeball did not seem worth the risk that would be run. The first four operations were done under ether, the others without anæsthetic, except that in the ninth a solution of muriate of cocaine was injected at the location of the wound. In this case there was no complaint of pain. The third patient complained but little, but the fourth complained of sharp pain when the nerves were torn. In this my experience agrees with Badal's, who says that the operation is so slight and so quickly done that anæsthetics are unnecessary.—*American Journal of Ophthalmology*, July, 1886.

SYPHILITIC CHOREA.—A young man in Buenos Ayres, who by his strange contortions had excited the curiosity of the passers-by, recently came under the care of DR. FRANCESCHI, who was somewhat puzzled by the symptoms. The movements were of a choreic nature, the most characteristic being a contortion of thoracic abdominal and pelvic muscles. The patient's condition became so grave that he could not move out of his room. For a month various methods of treatment were unsuccessfully employed — electricity, sulphur baths, strychnine, hyoscyamine, etc. A consultation was then arranged with Drs. Valdes and Alcorta. The first of these gentlemen remembered having treated the patient six months previously for a chancre, which at the time was not thought to be syphilitic, and had not been treated by mercurials. There were no enlarged inguinal glands or other marks of syphilis; however, it was decided that the chorea might be of syphilitic origin, and therefore Ricord's pills (green iodide of mercury), inuction over the spine of a mercurial and croton ointment, together with Van Swieten's solution (perchloride of mercury) and vinum ferri, were prescribed. In three days salivation occurred, and simultaneously with it the choreic convulsions disappeared. The mercurial treatment was then discontinued, but it was found necessary to resume it, for the convulsions soon began to recur. The salivation subsequently became so distressing that the mercury was again stopped, and the convulsions returned, though not so severely as before. Mercurial and iodide treatment was continued for six months, at the end of which time the patient was completely cured. Dr. Franceschi considers this case especially instructive, as though various predisposing causes are usually named in connection with chorea, neither syphilis nor mercurial treatment is mentioned, as far as he can find, by Bouchut, Graves, Jaccoud, Diday, Tardieu, or Trousseau. It has, on the contrary, been stated that mercurialisation may act as a factor in its etiology; here, however, is a case in which mercury cured it. The author seems to think that perhaps a hereditary syphilitic taint may sometimes have some effect on the development of chorea, and that, if so, mercury would be the best form of treatment to adopt.—*Lancet*, July 31, 1886.

URETHAN AND CHLORAL IN TRAUMATIC TETANUS.—MR. WM. THOMAS JACKMANN gives the following brief notes of a case of tetanus which recovered under the influence of the new hypnotic, urethan, in conjunction with chloral hydrate:

J. C., a lad aged 15 years, came under my care on March 15, 1886. The patient presented well-marked symptoms of tetanus, which were evidently the result of an injured finger on his right hand. This had been crushed by cogged wheels five weeks previously, and had healed up slowly under simple local treatment. The lockjaw was complete, and the episthotonus well marked; severe paroxysms of pain were complained of, which were greatly exaggerated at night. The patient had noticed his neck and jaw muscles gradually becoming stiff for the past few days, but attributed this to a chill. Chloral hydrate in 20-grain doses every three hours was ordered. This relieved the paroxysms of pain slightly during the day, but the lockjaw, episthotonus, and rigidity of the muscles of the legs remained the same, and the pains were just as severe and frequent during the night. Fluid nourishment was administered and the chloral treatment continued until March 25, when, as no abatement of the symptoms were apparent, after consultation with my partner, Mr. T. Simpson, it was decided to discontinue the chloral during the night, and in its place give the patient four grains of urethan every two hours, from 6 P.M. to 6 A.M. The first night of this treatment showed a marked decrease in the severity of the symptoms, and the patient made gradual and uninterrupted progress until April 20, when his recovery was established. The failure of the chloral hydrate to relieve the severe symptoms during the nights, and the well-marked improvement under the influence of the urethan, seem to point to the latter being likely to prove a very valuable drug in the treatment of tetanus, either prescribed alone or as above in conjunction with chloral hydrate.—*Lancet*, June 12, 1886.

EFFECT OF SUBCUTANEOUS FRACTURES ON BODY TEMPERATURE.—E. MÜLLER has recorded the rectal temperature in 36 cases of uncomplicated fractures, and found, in opposition to the observations of Maas, a rise in temperature in 35. The maximum was usually reached on the first or second evening, and was maintained for from one to thirteen days. Neither the age of the patient, the amount of extravasation, nor the extent of the fracture appeared to influence the extent of the rise in temperature. Müller has collected all the records of uncomplicated fracture (English, German, and American) at the time available to him, and finds that out of 359 cases, 308—85 per cent—passed through with marked rise of temperature.—*Centralblatt f. Chirurgie*, June 12, 1886.—*Medical News*, August 14, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, AUGUST 28, 1886.

SCARLATINAL NEPHRITIS.

It is a striking coincidence that the two most important contributions on the subject of scarlatinal nephritis that have ever appeared in this country were published within a few days of each other; the one a chapter on the subject in DR. PURDY'S recent work on "Bright's Disease and Allied Affections," the other an article on the subject by DR. I. E. ATKINSON, of Baltimore, in the July number of the *American Journal of the Medical Sciences*. Of the various dangerous complications and sequelæ of scarlet fever none are more important, or more dangerous to immediate or subsequent life and health, than the derangements of the kidneys. A number of careful observers hold that the kidneys are always affected in scarlet fever; that nephritis is as essential a feature of the disease as is the rash of measles. However this may be it is certain that there is an enormous number of cases of nephritis arising from scarlatina, and it is a clinical fact that almost all fatal cases of scarlatina present renal symptoms.

It has been held that while a very large percentage of cases of scarlatina present albuminuria, all these are not truly nephritic. It is not necessary to claim that each case of albuminuria arising in the course of scarlet fever is due to an actual nephritis, but it is certain that a very large number of the cases of so-called pyrexial albuminuria occurring in scarlet fever are nephritic, and accompanied by nephritic lesions. There are cases also in which nephritic lesions are found at the autopsy, though albumin may not have been present during life. To still further show the importance of the subject, we have no means of knowing the particular cases of scarlet fever which are most likely to be accompanied or followed by nephritis. Various symptoms have been pointed out which were supposed to indicate that the kidneys were or would be involved, but with the exception of those mentioned by Mahomed they seem to be valueless: he insisted that the nephritis of scarlet fever is preceded by increased arterial tension, constipation, and the presence of blood-crystalloids in the urine (which may be recognized by means of the guiacum test). There are pathological reasons for supposing that future observation will probably confirm this statement. But it is not our intention to speak exclusively of those cases of scarlatinal nephritis which arise during the course of the primary disease, or which are already distinctly recognizable before the disease has passed off. There are some cases in which the primary disease has occurred years before, and has probably been almost forgotten by the patient or the family; the physician is called to treat a case of dropsy, which is ascribed to a transient disorder occurring but a short time before. Or it may be that the patient is suffering from cardiac hypertrophy with slight albuminuria, or he has albuminuric retinitis, and a careful examination will disclose a history of scarlet fever as many as ten or fifteen years previously. In these cases we must believe that nephritic symptoms occurred during the primary disease, but were unrecognized and have pursued a latent course until they have now passed into the chronic form. It will be seen, then, how necessary it is to continue treatment, and the most careful supervision over the patient, until all evidences of the disease have disappeared. And not only this; but no one should fail to keep a most careful watch over the kidneys in a case of scarlet fever, however mild it may be.

It is of the utmost importance that every case of scarlatina be treated with a view of preventing renal complications; this should be done from the beginning of the disease. The urine must be examined daily in every case, especially during the second, third and fourth weeks; it is not sufficient to examine for albumin, but evidences of renal disease must be watched for with the microscope—for, as has already been said, renal disease may be present though albumin be temporarily absent from the urine. When nephritis is present the urine contains renal epithelium, casts, and generally some blood corpuscles, the casts being cylindrical, hyaline, or epithelial. This examination should include a portion of the whole urine passed during twenty-four hours. It seems scarcely necessary to go into the refinements of chemical and microscopic examinations in these

cases, except to determine if possible the extent to which the kidneys are damaged; for when renal epithelium, casts, blood corpuscles, and possibly albumin are found in the urine of a case of scarlatina we need scarcely hesitate as to the diagnosis. It would be well also to take a sphygmographic tracing of the pulse regularly, if for no other purpose than to determine the correctness of Dr. Mahomed's statement in as many cases as possible. In cases in which the scarlatina has been overlooked on account of its mild character there may be doubts as to the form of the renal lesion present; in these cases much may be done by obtaining a history of recent scarlatina in the family or the vicinity, and by careful examination of the patient for evidences of desquamation or of recent sore throat.

The fact that scarlatinal nephritis is of rare occurrence in the first year of life seems in a measure to give at least one indication for treatment, since it is in this year that the patient's food is almost exclusively milk. Jaccoud said about a year ago that for fifteen years he has not had a case of nephritis among his scarlatinal patients, and he attributes this to his exclusive milk diet. It should be used from the beginning of the attack until the end of the fourth week. The patient should be carefully protected; Mahomed declared that a slight chill during convalescence is sufficient to cause albuminuria. Daily baths or tepid sponging should be practised during the height of the disease, and by this renal complications are frequently avoided. In the mildest cases the patient should be kept in bed for at least a week after the fever has subsided: and he should not be permitted to leave the room before the end of the third week. During convalescence the daily tepid bath or sponging should be practised until desquamation is completed, as a measure of precaution against the spread of the disease. Active purging is unnecessary, but it should be remembered that a condition of constipation may raise the blood pressure and hasten renal inflammation; and Mahomed held that the failure of the bowels to move on a single day was sufficient to cause high arterial pressure and its results. Certain authors recommend the internal administration of chlorate of potash and salicylates in scarlet fever; they should not be used, nor should any drug be given which is known to be a renal irritant. With the first symptoms of renal trouble we should begin the administration of digitalis, as there can be no doubt that it is the most powerful drug that we possess in dealing with scarlatinal nephritis. Other useful diuretics are the citrate, acetate, bicarbonate and bitartrate of potash. Dr. Atkinson especially recommends a lemonade made by adding one drachm of cream of tartar to a pint of boiling water into which a lemon, cut into thin slices, has been dropped. This quantity, properly sweetened, may be taken by a child 5 years old during the day. Pure water is also an efficient diuretic, and may be given freely. It is in the anuria, or threatened anuria, of scarlet fever that the alkaline salts are most useful. The convoluted tubes are now blocked up with colloid matter, and as colloid matter is dissolved when brought in contact with an alkaline solution, the indication is clear. The salts of potash formed with vegetable acids are most desirable in this case. The salts of sodium are less efficient than the potash salts, but in some cases they may be used with advantage, especially when it is desirable to render the urine alkaline for a considerable time. Here the acetate of sodium or the effervescent citro-tartrate of sodium may be used. More pleasant than these, and equally efficacious, it seems, are the granular effervescing citrate of potassium and citro-tartrate of sodium, and citrated kali.

Attention should be paid to the proper action of the skin. The hot pack, wet or dry, is very useful; but care is demanded that sudden chilling do not occur. In cases of threatened uræmia jaborandi or pilocarpin will often prove useful; but one must not forget the effects of these drugs on the heart, and the danger of inducing collapse. Should uræmic coma or convulsions occur they should be treated without reference to the primary disease. It seems necessary to say that the most efficient means of treating uræmic convulsions is by the subcutaneous use of morphine; it is very much more efficient than chloral in uræmic convulsions from any cause. It is not, as many suppose, dangerous to life. The cardiac complications in scarlatina should receive prompt attention. When the area of cardiac dulness begins to extend, the second sound becoming more accentuated, and the apex impulse changing its position digitalis should be administered. Should the symptoms of hypertrophy continue it as well to add convallaria to the digitalis; the fluid extract of the leaf in three to ten drop doses. There is reason to hope that in those grave cases in which hypertrophy has passed into dilatation we have an efficient drug in strophanthus, which is a more powerful and rapid cardiac stimulant than digitalis; but it is unsuitable as a substitute for digitalis in the general treatment of scarlatina. Its action seems to be wholly on the cardiac muscle, it having little or no action on the arterioles. It will aggravate rather than be of service in those cases in which nephritis is very acute, and the urine very bloody.

PASTEUR'S ANTI-RABIC INOCULATIONS.

Notwithstanding the apparent successes of Pasteur's anti-rabic inoculations there still seems to be a great deal of scepticism in the medical profession and among the laity. The medical journals have been diligent in supplying a hungry public, lay and medical, with the details of the performances of the eminent biologist, and the impressions produced certainly seem to be most varied. Dr. Grancher, Pasteur's Assistant and Inoculator, has recently thought it proper to vindicate in a public lecture the character of M. Pasteur, which has been so much aspersed through the unseemly malignancy of his adversaries; and certainly no one is better qualified for the task than Dr. Grancher, who has been Pasteur's Assistant from the beginning of the inoculations.

After going into the diverse phases of the questions at issue, and the methods followed by Pasteur in his work, dating from the day of his communication, on January 24, 1881, to the Académie des Sciences on the saliva of a child which died from rabies in Lannelongue's wards, to the application on Meister, the first human subject of the experimental method which had succeeded so well on animals, Dr. Grancher also drew attention particularly to the objections made from different quarters to the method. These objections may, in reality, be reduced to two: 1. M. Pasteur treats his rabic patients with a product which is not rabic; this is the opinion expressed by English medical men. 2. The second objection (which is made by a large number of the French Faculté) is that the greater part of those inoculated had been bitten by dogs which were not rabid. The English medical men who composed the Commission appointed to investigate the subject went over to Paris, and, after having witnessed the inoculations at Pasteur's Laboratory, took back with them a rabbit rendered rabic by Pasteur's method. They inoculated another rabbit with its spinal marrow, and afterwards four dogs with the spinal marrow of the rabbit which they had inoculated. The dogs died some time afterwards with symptoms of evident rabies, which seemed to remove all doubts from the minds of the Commission. As to the doubts entertained by the French, Dr. Grancher replies by referring to the statistical report framed by MM. Chantemesse and Charrin, who have been lately appointed to Pasteur's Laboratory, and charged to analyze the cases of 1335 persons inoculated up to June 21st. The following considerations may be deduced from this report: Having in the first instance noticed persons bitten by mad dogs, whether the condition of the dogs was verified at the autopsy or that their spinal marrow had determined rabies in another animal, or whether the symptoms observed permitted no doubt as to the malady, the authors found that of 96 patients belonging to the first category there was one death, or a mortality of 1.04 per 100, or 10 per 1000 in round numbers; and of 644 persons of the second category 3 died from rabies, a mortality of 0.46 per 100, or a 5 per 1000 in round numbers. These results comprise only those persons bitten before April 22; that is to say, when the disease was in full force. These statistics, compared with those of M. Leblanc, on Hydrophobia in the Department of the Seine, give an average mortality of 7.5 per 1000 instead of 160 per 1000. As to the 48 persons bitten before April 22 by mad wolves, they cited 7 deaths among them, or 14 per 100; but statistics established later show a mortality of 82 per 100 from bites of mad wolves. In an article in the "Dictionnaire Encyclopédique des Sciences Médicales," Dr. Brouardel gives a mortality of 67 per 100. Thus it is seen that the difference between the two results is very great.

In following up their investigations MM. Chantemesse and Charrin have established special statistics of results of bites in uncovered parts, such as the face and hands. Of 54 persons bitten in the face and hands before April 22, by dogs known experimentally to have been mad, there was one death, or a mortality of 1.8 per 100, or 18 per 1000. Of 400 persons bitten on the face and hands by dogs known clinically to be mad there were 3 deaths, or a mortality of 0.75 per 100, or 7.5 per 1000. In referring to the documents of the Council of Hygiene from 1862 to 1872, it is found that for bites of the face there was a mortality of 88 per 100, or 880 per 1000; and for those of the hands a mortality of 67.25 per 100, or 672 per 1000. In taking the average of these two groups, that is to say, in placing together the tables of bites on the hands and those on the face the result is 800 per 1000, instead of 18 and 7.5 per 1000.

Dr. Grancher has thought that it would be interesting to compare the efficacy of the three vaccinations in vogue: that of Jenner, that for charbon, and that for hydrophobia. Before the era of Jennerian vaccination, the non-vaccinated (non-inoculated) died from smallpox at the rate of 500 per 1000, those imperfectly vaccinated in the proportion of 260 per 1000, and those effectually vaccinated in the proportion of 23 per 1000. The veterinary surgeons who vaccinate for charbon have furnished the following statistics: Mortality before vaccination 120 per 1000; after vaccination an average of 5 per 1000. The statistics of M. Leblanc compared with those of

Pasteur concerning hydrophobia give the following results: Mortality before anti-rabic vaccination 160 per 100; after vaccination 7 per 1000. The prophylactic influence of these three kinds of vaccination is therefore evident; and, as M. Grancher remarks, the above facts fully reply to the objections made, and still more to the systematic negation of certain persons who build their arguments on a few isolated cases instead of examining the question as a whole.

Dr. Grancher gives some information as to the methods by which Pasteur obtains the attenuation of the rabic virus when it is submitted to dessication by contact with sterilized air. But since his earlier inoculations he has made certain modifications in his method, so as to simplify it as much as possible, and he has succeeded in being able to suppress the inoculation with the spinal marrow for the first three days. The rabbits to be inoculated are now chloroformed while being trephined and inoculated, and these operations are done with aseptic precautions as much as possible. The room is only slightly moistened with carbolic acid; if it were thoroughly washed out with the acid the virus would be destroyed. Now only ten inoculations are made, instead of thirteen as in the case of Meister, the first patient. They are made every two days, so that there is a day's interval after each inoculation. The first inoculation is made with a spinal cord that has been preserved fifteen days, the second with a cord fourteen days old, and so on; the last being made with a cord only six days old. He uses cords only from one to five days old for those cases in which the wounds from the bites are especially dangerous, either on account of the region bitten, the number of the wounds, or on account of the death of injured tissue.

CHEVREUL'S CENTENARY.

On next Tuesday M. CHEVREUL, "Doyen des Etudiants," as he calls himself, will be one hundred years old. He bids fair to be at that time, as he is now, in possession of sound health and unimpaired mental faculties, if we may judge by the fact that he now works nine or ten hours daily with the vigor and enthusiasm of a young man who has yet to win his reputation and fortune. He has a face that more properly belongs to the man of three-score than one hundred years, and a clear firm voice which has but little if anything of senile weakness. And there seems to be nothing to prevent his enjoying the celebration which will be held in his honor in his native place, Angers. There will be a procession, and a dinner and fireworks, a few speeches perhaps, and it is not unlikely that the great scientist will tread a measure with some of the girls whose great-grandfathers were his playmates.

His father was a successful physician in Angers, and noticing the early liking of his son for chemical investigation taught him carefully, sent him to the best school in Angers, and to Paris in 1803, when he was 17 years old. That was just nine years after the killing of Lavoisier on the edict "The Republic has no need for scientists." The young Chevreul was admitted to the laboratory of the, at that time, great Vauquelin, who had risen from the position of an errand-boy in a Rouen apothecary's shop to the Professorship of Chemistry in the Institut Nationale and in the Faculté de Médecine, having been a pupil of Lavoisier. With Vauquelin Chevreul remained for twenty years. His earliest chemical work was the investigation of fossils; and it should be remembered that at that time geology was scarcely a formulated science. About 1805 some fossils were unearthed by engineers working in the valley of the Loire, and the young student went there to study them. The result was a small book the next year giving an account of what he found. Finding in those fossil remains the same elements that compose living bodies of to-day, he was induced to examine the chemical composition of animal bodies, and the next twelve years of his life were devoted to that task, most attention being paid to the animal fats, oils, wax and butter. He endeavored to ascertain by analysis the proportions of the various elementary substances, carbon, nitrogen, and hydrogen, contained in these bodies. The chemist of to-day would not think that a difficult task; but at that day there were but few of the apparatus now found in every laboratory, and modern methods of analysis were unknown. This work gave a new book to science, and added such names as margarine, stearin, oleic acid, and butyric acid. For that book the French Society for the Encouragement of National Industry awarded Chevreul a prize of $600. He was then appointed Professor of Chemistry at the Gobelins Works, and soon after this he filled the chair at the Lycée Charlemagne; and in 1826 he succeeded his great master Vauquelin.

It is a pleasure, even at this distance, to add any tribute of respect to one who rocked the cradle of chemistry; who has since done so much for this cornerstone of medicine. Centenarians are just rare enough to be somewhat as curiosities to unthinking people; but what must be the feeling of respect for one who has continually added to science since 1805; who was living when his countryman Bichat gave

general anatomy to medicine; who had been a laborer in the field of science when Magendie was at work; who was a contemporary of Fourcroy and Vauquelin, of Gall, Rolando, Jacob, Soemering, and Chossat, Chladni and Retzius, Remak and Schwann; of Hamburger, Siebold, Berzelius, Eberle, Valentin, and Claude Bernard, and other physiologists and chemists. It is granted to but few men to see a great science arise, watch it for almost a century, and to be one of its able exponents during that time.

The people in the old country have a very pleasing way of remembering and honoring their silent workers in science; perhaps it will be a custom in this country when our people can spare the time from the ceaseless rush after the dollar.

SOCIETY PROCEEDINGS.

GYNÆCOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, Friday, June 18, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

DR. W. W. JAGGARD exhibited

A GRAVID UTERUS WITH ADNEXA, CORRESPONDING TO THE SIXTH MONTH.

The material was placed at his disposal through the courtesy of Dr. H. H. Frothingham, one of the resident obstetricians of Cook County Hospital.

The patient, 30 years old, multipara, came under observation May 17, 1886. While sitting on a chair in the ward, she began to show signs of asphyxia. She was immediately put to bed, but died within five minutes of the beginning of the attack.

Autopsy made forty-eight hours after death.

External appearances.—Some venous hypostasis over dependent portions.

Lungs. — Engorged with blood in lower lobes. Œdematous throughout.

Heart.—Left ventricle partially, but not fully contracted, contained fluid blood, and small clot. Left auricle contained small amount of clotted blood. Right side of heart contained clotted blood in considerable quantity; clots all dark in color.

Valves. — Normal in thickness and competent. Endocardium.—Deep wine-color; smooth.

Myocardium.—Soft, friable. Few spots of emphysema under visceral layer of the pericardium. Left coronary artery contained a clot at distal side of first branch. Intima of artery stained deep wine-color.

Abdomen—Peritoneum apparently normal. Gravid uterus with fundus extending to the level of the umbilicus. Large corpus luteum in left ovary. Upon opening the uterus a male fœtus, in the embryonal position, was found. Placenta separated from the uterus by its own weight and without any effort to detach it.

Intestines apparently normal.

Liver enlarged, friable, deeply congested. Spleen slightly enlarged, and very friable. Kidneys congested; acute pyelitis in each pelvis. Bladder normal.

Brain.—Some congestion of envelopes, and at posterior margin of *tentorium cerebelli* two small, round, firm tumors intimately attached to the *dura mater* and pressing upon cerebellum at posterior internal angle of each hemisphere. Tumors are each about the size of a filbert, upon section presenting a grayish firm surface at periphery, and a disintegrated portion at the centre. Cerebellum.—Soft and pale throughout, *arbor vitæ* appearance almost entirely disappeared. No trace of hæmorrhage or embolism discovered. Ventricles of cerebrum contained little fluid. The *intima* of the vertebral and basilar arteries presented the same appearance as that of the coronary.

Dr. Jaggard desired to call attention to the condition of the cervix. The cervix is a funnel-shaped object, the neck of which measures 4 cm. in length; thickness of wall, 2 cm. The upper, expanded portion measures 1.5 cm. in length; thickness of the wall 1.5 cm. The mucous membrane lining this funnel-shaped cervical canal differs in its macroscopic characters from the mucous membrane lining the uterine cavity. The cavity of the cervix is filled with a white, coagulated secretion. The insertion of the membranes forms a circle around the upper expanded portion of the cervix, about 7 cm. in diameter, corresponding to the site of several large veins in the muscular substance of the uterus, and the insertion of the peritoneum externally. At this point, the muscular substance of the uterine wall becomes thinner. The average thickness of the muscular wall of the uterus is 1 cm; that of the cervix 1.5 to 2 cm. Total length of the uterus, 17 cm.

The macroscopical characters of the preparation seemed to sustain the position assumed by Bandl, Küstner and Carl Braun, recently opposed with considerable force by M. Hofmeier. Dr. John Bartlett, a distinguished Fellow of the Society, read a paper entitled *The Cervix Uteri Before, During and After Labor*,[1] July 14, 1873, before the Chicago Medical Society (several years prior to the appearance of Bandl's classical monograph upon the same subject) from which the following extract is made:

"Early in pregnancy the neck of the uterus is called upon to supply its quota to the enlarging body. Speaking somewhat figuratively, as ring after ring of tissue is demanded from the upper part of the cervix, the preparatory development in the remaining portion is such that the length of the neck is not apparently impaired, so that what remains of it as late as two weeks before labor has been mistaken for the entire infra- and supra-vaginal cervix, whilst the loss by the continual transfer from the upper portions of the neck to the uterine walls has entirely escaped notice. That circle of the neck which corresponds at the time of an examination to the limits of its expansion, is regarded by writers as the os internum. The os internum is, of course, as before labor, above the attachment of the vagina, and, near

[1] The Chicago Medical Journal, October, 1873.

term, far removed from the examining finger. The apparent constriction taken for it is simply that point in the cervical walls marking the constantly decreasing line of demarcation between the expanded and yet unexpanded portions of the neck."

DR. A. REEVES JACKSON, in beginning the discussion on Dr. Parkes's paper on the treatment of uterine fibroids by ergot, said: I was very much pleased to hear the reading of Dr. Parkes's paper. I commenced using ergot in the treatment of fibroids in June, 1873. I had used it in eight cases at the time Dr. Byford read his paper based on 103 observations gathered from various persons in this country. I was extremely pleased with the result; two of the patients seemed to be practically cured—that is to say, while there could be distinguished some remaining enlargement of the uterus, the symptoms that were referable to the presence of the tumor were entirely removed, and the patients suffered no inconvenience from the bulk of the uterus. In nearly every case there was improvement. I continued to use it for several years, but have not used it lately—I do not know why. The cases that have been published by those who use it extensively have all shown favorable results except those of Martin, of Berlin, and perhaps two or three others. There seems to be no reason to doubt that ergot, whether given hypodermically, by the mouth, or rectum, does have some controlling influence on the development of uterine myomata, checking the growth or lessening the size of the tumor. Indeed, there is reason to believe that it is one of the very best means of dealing with these tumors. I have used the remedy in perhaps thirty cases. I do not know just what the ratio of success was. In about three-fourths of these cases there was benefit. Sometimes the good effect did not consist in diminution of the size of the neoplasm, but from improvement in the general health of the patient. I was very glad to hear of the almost phenomenal success that followed the practice of Dr. Parkes. In some of the cases he relates the patients were, however, evidently in great jeopardy from the sloughing of the mass, and the difficulty of getting it away before septicæmic symptoms came on. There is great danger, unquestionably, in having a sloughing fibroid retained within the uterus. The treatment by ergot should be accompanied by dilatation of the cervix, so that the mass, when separated from the wall of the uterus, may escape readily. This would lessen that danger. In some cases death has occurred very soon after the stinking discharge appears. Nevertheless, the treatment by ergot is very much less dangerous than any of our surgical methods of dealing with uterine fibroids.

THE PRESIDENT: Have you kept records of any of your cases?

DR. JACKSON: Yes, and I shall be glad, if the interest continues, to report them in detail. I kept accurate notes of the first cases so far as I had charge of the patients. Some of them occurred in the Woman's Hospital, and the patients would go away, and we did not always have means of ascertaining the final results. But of others, occurring in private practice, I can give accurate details.

DR. H. T. BYFORD: I made the assertion that there was no danger of a sloughing of the tumor when it is not situated so that it can be expelled by way of the vagina. This was based on the fact that, unless submucous, it cannot be firmly enough compressed. I have reported a case of fibroid tumor of the vagina,[1] whose thick pedicle was gradually cut through by daily tightening a fine wire about it; when the wire had cut through the pedicle, it was found to have reattached itself, and retained its vitality, showing that tumors of this nature require very little nourishment to keep them from undergoing sloughing. The cases on record are very few in which subperitoneal growths have sloughed from the use of ergot.

DR. W. W. JAGGARD said, with reference to priority in the use of ergot in the treatment of uterine fibroids, that Hildebrandt, of Königsberg, had published a paper in 1872, in which he recommended the drug. The growth of the neoplasm was limited by diminished access of blood, and, in some cases, it was actually expelled from the uterine cavity. Hildebrandt's recommendation was the revival of an old practice. Dr. Wm. H. Byford's paper—Address on Obstetrics—was read in Philadelphia in 1875. During the interval of three years, several papers were written extolling the action of ergot in the treatment of uterine fibroids, both in the diminution of the quantity of blood flowing to the tumor, and also in actively causing its expulsion from the uterus.

DR. HENRY T. BYFORD said: Dr. Jaggard fails to take into consideration the different ways in which ergot acts. It acts first, in a radical way by expelling the tumor, as in the submucous variety; second, in a gradual way by causing atrophy and absorption, as in the interstitial variety; third, in a partial way, by arresting the tumor's growth and activity, as in the subserous ones; fourth, in a palliative way by relieving the symptoms, as in cases of large tumors, near the menopause. Schroeder, in the last edition of his *Krankheiten Weiblichen der Geschlechtsorgane*, gives Dr. Wm. H. Byford credit for suggesting the use of ergot for the expulsion of the tumor. There is no longer any reason to doubt that ergot is the surest and safest cure for all but the very exceptional cases of uterine fibro-myomata. A tolerance of moderate doses is quickly established both by the organs through which it is absorbed and by the general system. Sloughing is almost never produced except in the submucous variety, when it need not be dangerous. For several years past, with one or two exceptions, I have not given ergot in any other way than by the rectum. I use 5 to 8 grains of Squibb's extract of ergot twice a day and continue it for two or three years, with favorable results. I remember one case in which the tumor extended almost to the umbilicus when I first saw her, five years ago. It was an irregular, nodulated tumor, mostly subperitoneal, with projections larger than the fist, filling up the pelvis, and to a great extent the false pelvis also, and sometimes caused excruciating pain by its pressure. The patient had repeatedly bled through six and eight weeks, and must have lost 100 pounds. Tampons were required to save her life. I never saw paler mucous membranes in a living

[1] Chicago Medical Journal and Examiner, August, 1885.

being. It was a very much worse case than many which I continually find cited in medical literature, in which hysterectomy is considered necessary. The patient begged to have the tumor removed. She could not take the ergot for any length of time either by rectum or mouth; but after a while she tolerated 5-grain rectal suppositories, and has passed the menopause. The tumor, having lost its activity, has become considerably smaller; while she, having regained her hundred pounds, has become considerably larger. I have a case which had been treated for a year with all of the most approved remedies, except ergot. When I first saw the patient, two years ago, she weighed eighty-three pounds; she had a nervous chill and almost fainted when I first entered the room, because I was a stranger. She had not slept for weeks except under the influence of narcotics, and had symptoms of acute tuberculosis. She was in the habit of bleeding steadily from three to six weeks, and was being so rapidly destroyed by the loss of blood that I at first had to use the tampon. She was put upon 8 grains of Squibb's fluid extract of ergot per rectum and tincture of iron by the mouth. Her health improved rapidly and the hæmorrhages progressively diminished. Her lungs were recently examined by Dr. H. A. Johnson, who found the remains of old trouble, but no tendency to unfavorable changes. Her cough, which had lasted so long, has entirely left her. She now takes the ergot a part of the time only. Her menses last four days, are natural in quantity and quality, and are followed every two or three months by a watery discharge of a faint pinkish tinge. She cannot feel the tumor now, although a projection the size of a child's head was formerly felt by her between the umbilicus and left groin. It might be said of this case that it was also a very proper one for operation, and one in which ergot, if harmful to the system, would have done injury. I have similarly relieved other cases nearly as bad, and cannot help believing that, when treated early, judiciously and persistently by ergot, fibroid tumors of the uterus will show a mortality of 1 or 2 per centum instead of 10 per centum as at present; that hysterectomy for fibroids, with its mortality of 20 to 40 per centum, will eventually become an interesting relic, and the removal of the appendages a precious rarity.

Dr. E. W. Sawyer said: There is one point that was not alluded to by the reader of the essay, and that has not been spoken of in the discussion. The fact that the point has been proved in practice shows that it is worthy of attention. That ergot will cause atrophy of a uterine fibroid, causing a detachment by ulceration and expulsion, is a well-established fact. When the fibroid is submucous, or nearer to the mucosa of the uterus than to its peritoneal surface, I have no doubt that that process can be continued and completed with safety. But let us suppose a tumor very close to the peritoneal surface; this process of atrophy takes place, the peritoneum ulcerates through, and the life of the woman is jeopardized. Such a condition occurred in a patient seen by the President of this Society, and it was shown that had the patient lived long enough the fibroid might have been thrown off through the abdominal parietes. This patient died of peritonitis. The large and partially detached fibroid was in a sac containing a great quantity of pus. This sac had ruptured, occasioning the peritonitis.

Dr. F. E. Waxham said: I would simply add my testimony as to the value of ergot in the treatment of submucous fibroids, by citing a case: A woman 45 years old came to me some time ago complaining of copious hæmorrhages at her menstrual periods, and upon careful examination an enlarged uterus was found, which nearly reached the umbilicus. The diagnosis of fibroid of the uterus was made. This woman was placed upon ergot, combined with opium, to control the pain, which she took for several weeks. Between the second and third months after commencing to take the ergot, I was called to her in great haste and found her apparently in labor, the uterine contractions quite regular and very severe; a partially dilated os and the tumor presenting. This tumor was expelled after two or three hours. It was nearly as large as a child's head at time of birth. The patient made a complete recovery.

The President: In what state was the tumor?

Dr. Waxham: I can hardly say it was softened, but it was fleshy in character, and some pus upon it as though it had suppurated. It was somewhat offensive, I remember. I attended her for some weeks subsequently; there was some febrile reaction, but no serious trouble followed.

The President said: I have reported a case in which a tumor was thrown off without sepsis. I have had since quite a series of cases in which tumors have been thrown off; some have been absorbed and there has been a various history, which I hope to make the subject of a special paper, and would like the assistance of others in making up a history of these cases. I think we are specially favored in having with us Dr. Wm. H. Byford, who has had such extended extended experience in these cases.

Dr. Wm. H. Byford, in closing the discussion, said: Mr. President, you are right in supposing that I feel great interest in this subject. I have made it a study for a long time. Perhaps as good a way as any to introduce my views on this subject to the Society, will be to go back to the commencement of my own researches in this matter. In 1872, as Dr. Jaggard has said, Hildebrandt commenced a series of experiments for checking the hæmorrhages connected with fibroid tumors of the uterus, by giving hypodermic injections of the extract of ergot, and succeeded in a great many instances in suppressing the hæmorrhage and relieving the patient from the inconvenient symptoms. During these experiments he also ascertained that the tumor would sometimes disappear. I think his statistics were not large, and that he only reported a very few, perhaps three or four, cases in which the tumors disappeared by atrophy during the time he treated them in this way. In 1874 I was elected to the chairmanship of the Section of Obstetrics in the American Medical Association, and as these experiments of Hildebrandt had attracted considerable attention, I thought it would be a good time to make some investigations as to the

value of his facts. I commenced correspondence over a large portion of the United States and Europe, but especially communicated with my friends in this part of the country, among whom were my immediate associates in this city, who had been engaged in using hypodermic injections of ergotine according to the method of Hildebrandt, once in two or three days. All of them bore testimony as to the efficacy of that kind of treatment, and as to the fact that these tumors could be made to disappear in a great many instances by atrophy, and in a great many more the symptoms could be relieved so that the patient was rendered comfortable, the presence of the tumor giving them but little inconvenience. Some of the gentlemen with whom I had correspondence had been using the ergot in different ways, giving it by mouth, giving it per rectum, and injecting it into the tumor itself, and by various other methods. I noticed one fact in my own practice and that of my friends, which was that the more frequently the ergot was given the more powerful its action was. In giving it two or three times a week hypodermically by the Hildebrandt method, there is very little distress produced by it; but the tumor may gradually disappear and the symptoms get better. I collected 103 cases from different parts of the country, and in all of them the attention of the practitioner was directed to the point of causing the disappearance of the tumor by atrophy. During the time I was making these investigations cases of fibroid tumors occurred in the practice of my friends, who consulted me. One was a remarkable instance in the practice of Dr. Merriam. I remember the particulars. The patient was a little Irish woman who had a tumor almost large enough to reach to the umbilicus. He commenced the use of ergot in September, 1874, twenty drops of Squibb's fluid extract three times a day. It produced so much contraction of the uterus and so much pain as to alarm the patient and the doctor himself; he thought these pains ought to be suppressed, and as a consequence he would intermit the use of ergot, give anodynes to stop the pain and get relief from the sufferings of the patient, but would recur to ergot as soon as his fears had subsided. In January, 1875, he directed her to recommence the ergot and increase the amount. He gave her, I remember very well, twenty-five drops of Squibb's fluid extract three times a day. In March, which was about two months from the time he began giving her ergot in that way, the patient commenced having expulsive pains very much like labor, and not long after that, probably about March 20th, there commenced to issue from the vagina a putrid liquid that was very offensive and which contained small pieces of organized substance. He became alarmed and entirely withdrew the ergot, supposing he was doing mischief, but the death of the tumor had been produced and as a consequence the uterus continued its action to throw off this foreign body, until April 5, 1875, he was summoned in great haste to see his patient. I was also summoned. Upon arriving at the house, which he did before me, he found the tumor expelled, part of it laid in the vagina and part between the limbs of the patient, a protruding mass almost the size of a child's head. It was not expelled in a lump, but was broken in pieces that would represent that size. The patient at that time had septic fever, with increased temperature and increased frequency of pulse, etc. The doctor and I both felt uneasy about her, but she very soon rallied and in a short time was well, and since has given birth to a child.

That was my first observation as to expulsion of tumors of that kind. It started a train of thought in my mind and led me to think about increasing the ergot beyond the amount that had usually been given for producing atrophy. In the same year, July, 1875, I commenced giving it with the view of expelling a tumor. I gave my patient at first fifteen drop doses of Squibb's fluid extract three times a day, and increased it until the patient was taking a teaspoonful of ergot three times a day. On August 15th, about five weeks after I commenced using it, the tumor was broken up and expelled from the vagina. It was expelled by pieces, the first piece about as large as my thumb, of a grayish kind of substance that smelled very badly. The action continued; I was somewhat alarmed and gave the patient anodynes, but the uterus had already commenced to act on the tumor and expelled it, as it would any foreign body. In December of the same year I had an opportunity of repeating the experiment, and the case terminated in the course of six weeks, by the same method of administering the ergot. In 1876, on returning from the world's exposition at Philadelphia, I was requested to call at Coldwater, Mich., to see two patients, one with cancer and one with a tumor. I found one of these patients with a tumor as large as my head, the measurement of the cavity being fully six inches. I told her I believed the tumor could be expelled if she was willing to go through the process. I felt uneasy, however, to leave her to use such medicine by herself, and tried to teach her how she should proceed when the expulsion should take place. She took the ergot three months without much effect, except that occasionally she would have a paroxysm of pain; after that, however, the pains became so very severe that she could not take the ergot much of the time. But, brave and intelligent as she was, she repeatedly resumed it, and finally the tumor commenced to come away. It came away in about five weeks from the time the first symptoms of expulsion occurred. She wrote me a description of the method of expulsion. She said at first small lumps made their appearance and passed out of the vagina; after the second day they became larger, and on the third and fourth days they seemed large enough to fill up the vagina. With her scissors she cut off pieces of it and pulled at it to assist its removal. She labored at it two or three days until it was all expelled. In about three weeks thereafter she came to see me, and the uterus had shrunk back to near its natural size. She has since had the menopause, and is now in good health. She sent me at that time a quart cup full of this expelled fibrous substance.

Another case occurred in the western part of this State, under the care of Dr. Crandall, of Sterling.

The patient came, by his directions, to see me, and I found a tumor of considerable dimensions and advised her to take ergot. She went home and in about fifteen or twenty days got her work done up, as she expressed it, took three doses of thirty drops of Squibb's fluid extract of ergot, and started up such a process of expulsion that, notwithstanding the efforts of her physician to stop it, the pains went on to the expulsion of the tumor, which was completed in about three weeks.

Dr. Wm. Fox, of Milwaukee, three years ago sent me a report of another similar case. In summing up these observations, I have known personally of twenty-six cases of expulsion of the tumor in this way. With reference to the dangers connected with the expulsion, I would say that only one out of these twenty-six cases proved fatal. They all had septicæmia to some extent, but as soon as the mass of dead tumor was removed the patient commenced to recover and got well. Some of the patients had no assistance. This one patient in whom it proved fatal lived in Monmouth, It occurred about six years ago. She was a lady who, like other foolish women, distrusted her home physicians, and she came here, supposing she would find better treatment. I advised her to take ergot, and in about three months the pains commenced that caused the tumor to be expelled. She came here with the lower part of the tumor hanging from the vagina and uterus while the upper portion was clinging to the cavity in which the whole of it had been lodged. She was then laboring under a high fever. The smell was terrible. She came to the Tremont House and it was several hours before I could see her. When I arrived it was a very simple matter to enucleate it, and I removed it in a few minutes. But she had already received a fatal poisoning from the retention of the dead tumor. This is the only case I have known to prove fatal. I do not get a history from other gentlemen of any more unfavorable results. They all tell me they are frightened at the symptoms, and they are afraid the patients are going to die, but they do not die. When the mass is taken away and the vagina washed out the symptoms disappear. Since thinking of this matter and observing the effects of this remedy I have thought I could come to definite conclusions as to the conditions under which we might predict the expulsive effects of ergot by the appearance of the tumor. You know that it is not a very common thing to find a case in which there is a single tumor in the fibrous tissue of the uterus. More frequently these tumors are complex. Quite a number of nuclei of formation; we often see in one uterus four or five, sometimes fifty different points of solidification. Now a single, or even a double tumor, located within the circle of the fibrous arch of the uterus near the mucous membrane, is the kind that I think may almost certainly be expelled. If you find a case of symmetrical development, where the uterus seems near its normal shape, no matter how big, so it is normal in shape, oval, or globular, without any large projections standing out in various directions, feeling somewhat elastic to the touch, and attended with hæmorrhage, you may be pretty sure you can expel the tumor by commencing with small doses of ergot and increasing them in size, and then when the pains begin, not to stop them. The presence of severe pains frightens a great many men from finishing what they have begun. If I were to try to explain this operation I would say when ergot is given in this way, after a while the tumor becomes starved, the supply is cut off so there is not blood enough to support it, and very soon it dies in consequence of this strangling process. When it dies there is, at the same time, gangrene of the mucous membrane covering it; then it becomes a foreign body and you cannot keep the uterus from expelling it. The expulsion is a consequence of this starvation and killing process in the tumor. As to the action of ergot in tumors that are not submucous, of course I know that tumors not submucous cannot be expelled. There is what is called the interstitial tumor, developed in the central stratum of the fibrous walls of the uterus; these are the proper subjects of the Hildebrandt process for atrophization. Then with reference to the effect of ergot upon subperitoneal tumors: I have often been asked the question, Can ergot affect these subperitoneal tumors? I think they are frequently starved out and cured; when not too near the peritoneum there is no danger of their becoming detached and putrid in the peritoneal cavity, because the action is from the tumor. In the submucous tumor the contractions are all towards it and none from it. There is one circumstance to be taken in connection with these tumors and the action of ergot upon them, that has not been sufficiently considered. A large proportion of them growing to any considerable size contract attachments to the peritoneal membrane, the intestines, omentum, or the walls of the abdomen, and in making this attachment they get a new supply of blood, which makes the life of the tumor more tenacious than it would be otherwise. This very process of adhesion to the walls of the abdomen is, more than any other, the cause of their great size and the change from a fibrous to a fibro-cystic tumor. We need not expect such tumors to be affected by ergot. There are a good many other things that interfere with the successful use of ergot, of which I cannot now speak. I am grateful to my western associates who have assisted me by facts and experiments on this subject. If you go to the eastern part of the United States they will tell you that ergot is of no use in the treatment of fibrous tumors, or it is too dangerous; the patient cannot live under the pains of expulsion, etc.; but if these same gentlemen had a patient in labor they would urge the pains instead of stopping them. Most physicians who do not believe in the efficacy of ergot use Hildebrandt's method pretty much altogether, which produces tonic contraction of the fibres of the uterus, but does not go to the extent of causing expulsive pains. Then, again, there is too great apprehension on the part of the profession generally of the dangerous poison of ergot. I do not know whether the history we have of the poisonous influence of ergot in producing nervous diseases, gangrene, and so on, is true; whether the observations that led to that teaching were correct at one time or not, but

I know that after the use of ergot persistently for two or three years in the same case, I have never seen any evil influence produced by it, unless it is in cases where the violent action of the uterus would be regarded as such. I have purposely avoided saying anything about the *modus operandi* of ergot in causing contractions in the uterine fibres, because that is now sufficiently understood by the profession. But, Mr. President, I feel that I have occupied too much of the valuable time of the Society already, and will say no more.

DR. WM. H. BYFORD presented

A STUDY OF THE CAUSE AND TREATMENT OF PELVIC HÆMATOCELES.

The author cited the case of a non-suppurating, retro-uterine hæmatocele of six months' standing, which he evacuated *per vaginam* March 18, 1886, and then treated with antiseptic irrigations. She was up and about the house in eleven days. As the odor and discharge were still causing discomfort, the doctor, influenced by the advice of Apostoli and Doléris, curetted the cavity. He found no more blood or débris, but started up a mild attack of local peritonitis, which delayed instead of hastening the cure. The patient left the hospital in a little less than a month after the cessation of all discharge. A small lump of induration extending from the abscess opening to the right sacro-uterine ligament was all that was left of the tumor.

The following résumé of interesting points in the case is given:

1. The length of time from the occurrence of the hæmatocele to the time of operation, about six months.
2. The method of opening the cavity, viz.: by first tearing the vaginal wall, and afterwards the sac wall.
3. The absence of fluid in the tumor.
4. The breaking up of the mass with the finger without an attempt at thorough curetting or removal of the entire contents.
5. The complete disintegration and discharge of all bloody substance in thirteen days.
6. The absence of high temperature—102° F. having never been reached.
7. The small amount of anodyne required—one dose (except the two doses to relieve the irritation from subsequent unnecessary curetting).
8. The toleration of strong antiseptic solutions. It was necessary to weaken them on account of their effect upon the vagina.
9. The absence of the usual amount of odor in such decomposing masses.
10. The large quantity of food taken throughout.
11. The absence of any kind of sickness from the beginning until the cavity was curetted.
12. The curetting of the cavity on the thirteenth day delayed her recovery, producing the only serious symptoms that were noticed.
13. Notwithstanding a setback of ten days caused by the curetting, she was well enough to go home inside of a month and dispense with treatment.
14. The attack came on after a miscarriage.

P. F. Mundé reports two new cases of hæmatoma successfully operated upon three and six weeks, respectively, after their occurrence, both large, and resulting from or after abortions. (*N. Y. Medicinische Presse*, Vol. 1, No. 1, Dec., 1885.)

Five other cases are briefly related, four extra-peritoneal hæmatomas and one large retro-uterine hæmatocele, which had come under the writer's observation during the past two years, and which were successfully treated on the expectant plan. He was unable to find justification in any text-book for having operated in the absence of any threatening symptoms until he procured the last edition of Billroth & Lücke's "Frauenkrankheiten" and Schroeder's text-book (both of 1886). He cautions against taking the advice of Bandl, to operate after the first subsequent menstrual period, or that of Apostoli and Doléris, to operate immediately by the galvano-puncture wherever and whenever found. Operations at such times are connected with what are designated as immediate dangers, viz.: "a recurrence of shock, hæmorrhage, or (if hæmostatic tampons be used) of inflammation; or of septicæmia followed by inflammation, if antiseptic injections of sufficient strength be used."

The dangers of the expectant treatment are mostly remote, and are such as "suppuration, septicæmia, perforation, and prolonged pressure upon, and displacement of, surrounding organs, with their results, viz.: the aggravation and perpetuation of pre-existing pelvic disease, or the originating of new ones."

While recognizing the necessity for evacuation within the first three or four weeks in certain exceptional cases, he would, as a rule, delay operating long enough to avoid the immediate dangers, yet not long enough to incur the remote dangers of delay. The patient must invariably be kept in bed and the tumor should be left alone until the primary acute symptoms subside. If the tumor remain hard and diminish in size no matter how slowly, it should be let alone as long as the symptoms do not become worse. If the tumor remain stationary and boggy to the feel, and the symptoms begin, after a few weeks, to increase in severity, it must be operated upon; or if the symptoms remain without improvement, while the tumor shows no signs of being absorbed, it is better not to wait for serious symptoms, but operate in the subacute stage, or when the symptoms have subsided as much as they will. There is a certain class of cases, like the first one reported, in which the acute symptoms subside, the patient recovers considerable strength, but the tumor remains elastic, or boggy, and almost stationary, and interferes with her usefulness. If the patient cannot, from adverse circumstances, or does not wish to make an invalid of herself for the many months of quiet and carefulness requisite for safe absorption of the organized clot, she should have the benefit of an operation at a time when it is almost devoid of danger.

Dr. Byford would not select the method of operating recommended by Apostoli and Doléris because two sittings would be required for a complete operation, and because the use of the curette through so small an opening as would be justifiable by galvano-puncture is not devoid of danger. He prefers punc-

turing and tearing with a dilator, first the vaginal and then the cyst wall, to Zweifel's method of incising, on account of the less liability to trouble from hæmorrhage. He also advises the attack of such retro-uterine hæmatoceles as are accompanied by obliteration of the Douglas cul-de-sac by puncture and dilatation per rectum, when possible. The difficulty would be but little greater than the dilatation of the fistulous opening of a pelvic abscess.

Thorough curetting is condemned as dangerous, but a breaking up of all solid material by the finger, and the trusting to copious, strong antiseptic irrigations (which can be endured much stronger if the abscess walls are not scraped), is recommended. Hydrarg bin-iodide $\frac{1}{3000}$, or bi-chloride $\frac{1}{2000}$, or acid carbol. 1½ to 2 per cent. twice or three times a day, as necessary. Instead of a drainage-tube being used, the finger may be passed through the opening daily in order to dilate and insure free discharge. On account of diagnostic difficulties an aspirating needle should precede the use of the knife.

The discussion of Dr. Byford's paper was deferred until the next regular meeting.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, April 28, 1886.

The President, C. H. A. Kleinschmidt, M.D., in the Chair.

Dr. John B. Hamilton showed some

GRANULES OF BONE REMOVED FROM A TUMOR.

The history of the case is as follows:

The patient, a girl of 19, had had caries of the spine in her youth and was at present a hump-back in consequence. About two years ago an abscess formed anterior to the left trochanter in the left thigh. This had been aspirated and about one quart of pus drawn away. About one month ago a "hump" appeared just back of the left trochanter. When the doctor first saw her he supposed that it was the reforming of the abscess. The tumor, however, was hard, and on palpation there was crepitation such as one gets in emphysema of tissues. He cut down on the tumor and removed the exhibit, which was contained in the fibres of the tensor vaginæ femoris muscle. One would suppose that such a hard mass would have produced suppuration, but in this case there was no pus or inflammation, and the pain which had been present since the first appearance of the tumor must have been due to pressure on the sciatic nerve. His theory of the presence of the deposit was that during the process of caries going on in spine in her youth, particles of exfoliated bone had gravitated with the pus which had formed the abscess and had remained on its removal.

Dr. Bermann exhibited a portion of

A LARGE NASAL POLYPUS

which he had removed. When the patient presented himself to him the polypus, which had been growing eight years, was visible protruding from the left nostril and also in the posterior nares, completely occluding that side of the nose. He had been obliged to remove it with the cautery, in sections. The exhibit was about half of the polypus, the remainder not yet having been removed. He had found that the inferior turbinated bone on that side had been eroded, and that there was a large cavity there.

Dr. Lyon showed the photographs and detailed the history of a case of

CANCER OF THE LEFT MAMMA,

occurring in a patient in the Government Hospital for the Insane. In 1865 the woman became afflicted with a suicidal melancholia, probably brought on by puerperal convulsions. She was at that time extremely violent, but has gradually become less so, especially since 1883. In that year a tumor was discovered just above the left breast but apparently not involving the gland. In June, 1884, this tumor, which was as large as a small egg, was removed, and a microscopic examinatiou proved it to be an alveolar sarcoma.

The wound healed well. Two months later three distinct tumors had each reached about the same size as the first one. One of these was in the left axilla and the two others were near the ends of the cicatrix of the first one. These were removed, and Drs. Blackburn, pathologist to the hospital, and Formad, of Philadelphia, pronounced them soft carcinoma. A third and fourth operation were done during the next six months. Each time the growth was larger, more rapid, and involved more tissue, and each time the incisions healed almost by first intention.

The tumor reappearing a fifth time, Dr. J. Ford Thompson was called in consultation and advised that no further operations be done. In the ten months which have passed since the last removal the tumor, as shown in the photographs, has become eleven inches long, seven inches wide, and projects a mass of suppurating and floridly granulating tissues two inches high and weighing probably several pounds. It extends from the shoulder downwards throughout the entire breast, with a continuation to the left as far as the floating ribs in the axillary line. There is wasting, and though there is no external evidence of involvement of any internal organ, it is probable that such is the case.

What he wanted especially to call attention to was the effect the cancer had as a counter-irritant on the partial dementia of the patient. He said that the element of pain is, in some insane persons, much less prominent than in sane persons. This we see in some instances of self-inflicted injuries which seem to have a quieting effect. In this case pain has never been much complained of, though it is possible that it never has been present in any great degree. Here the only other treatment besides supportive has been 15 drops each of tinct. opii and belladonna three times a day. This has been sufficient to keep her in a quiet and perfectly manageable frame of mind. When omitted, however, there is some little complaint of pain. The terrible odor emitted from cancer has been treated, with more or less success, with hydro-naphthol. The cancer is now rapidly breaking down.

DR. H. D. FRY presented the

BRAIN FROM A CASE OF TUBERCULAR MENINGITIS.

The history of the case is as follows: Dr. Fry saw the case first on April 18, 1886. The patient was a white female child 17 months old. There was a good family and personal history, except that child was a little late in dentition. For three or four weeks previous to his first visit his patient had been restless and fretful, there had been a desire to rest its head against its mother's shoulder and right-sided hemicrania, as shown by the child constantly carrying its hand to that side of the head. There had been only occasional vomiting and no constipation—rather the contrary. When first seen the pulse was 100, temp. only slightly elevated. The mind was dull, the pupils dilated, and there was complete left hemiplegia. The child gradually became less susceptible to external impressions, and on April 21 it could not be aroused. The temperature had several times reached 103°. At this time the pulse was 160, the pupils widely dilated, though reacting to light, and there was alternating internal squint. The right eye was staring with the lids wide open while those of the left eye were bolted. There was difficulty in swallowing. The muscles of the right upper extremity and shoulder were affected with clonic spasm and the fingers of the right hand were flexed on palm. Aggravated attacks of spasmodic contractions of the muscles were accompanied by hurried and panting respiration. Occasionally the contractions involved the left upper extremity, but at such times were of short duration. The child lived two days longer, the convulsions meantime ceasing and the coma deepening.

Dr. Fry said that complete hemiplegia is uncommon in tubercular meningitis. The authorities (Meigs and Pepper and Flint) mention incomplete paralysis as of occasional occurrence, while J. S. Smith and Henoch make no mention of this condition. The latter author, however, gives this as a symptom of "tuberculosis of the brain." The diarrhœa present in this case he thought was due to tuberculosis of the intestinal tract.

The brain was examined by Dr. Lamb, of the Army Medical Museum, and presented but little of a pathological appearance. There was some dilatation of the ventricles, most marked on right side. Pia mater much congested, and in vicinity of right middle cerebral artery showed many minute opaque spots, which have disappeared since placing the specimen in alcohol. None found elsewhere. To the naked eye there appeared to be tubercles. Fluid in ventricles and general cavity increased in quantity and was turbid; substance of brain congested.

DR. TAYLOR said that he had had a case of a child 20 months old who had had symptoms very much as the above. There was bolting of eyes and fixed stare. The child could swallow when liquid food was put in its mouth. His patient had remained comatose for seven or eight days and then slowly began to recover and was now convalescent. He had diagnosticated tubercular meningitis, but was beginning to doubt its correctness. He had at present another case of spinal meningitis the etiology of which might be either idiopathic or traumatic. In this case there had been opisthotonos. This was also getting well.

DR. SMITH asked if any gentleman had had any experience with opium in meningitis. In his hands the bromides and the ordinary method of treatment had been of little avail, and he had not only had but few recoveries from any of the forms of meningitis, but had heard of but few. He intended using opium in some form in his next case.

DR. TAYLOR said that he had used tr. opii with good result in one of the cases just reported.

DR. HAMILTON remarked that he was surprised to hear Dr. Smith say that he had heard of but few recoveries from meningitis. The books were full of reports of recoveries. In the winter of 1873 and 1874 he had seen in his own and others' practice about forty cases of epidemic cerebro-spinal meningitis, and of these 50 per cent. recovered. The cases were not, of course, all of the same severity, but the diagnosis in each case was plain. They would begin with dilated pupils, opisthotonos, etc., and in many cases were followed by remarkable sequelæ, such as abscesses in back and in neck, enlarged glands, etc. Some of the patients would be dead in several hours from the beginning of the attack. At the first of the epidemic the treatment had been the usual one, bromide of potash, iodide of potash, calomel, etc. But on looking up the literature of the subject in an old book published in 1811, he had found recommended hot baths, non-stimulating forms of the diuretics, ergot and aromatic spirits of ammonia. This plan was at once adopted and many cases recovered.

DR. MAGRUDER related the case of a child he had been called to see, who had been ailing and losing flesh for some months. There was a history of phthisis on both its father's and mother's side. There had been constant vomiting and diarrhœa for some time. When first seen it was in convulsions; warm mustard baths, blisters, calomel and bromide of potassium with chloral relieved it from these and they never returned. There was strabismus of one eye, convulsive movements passing over the whole body, and the fingers were contracted on palm. Jactitation was marked, while there was deep coma. This condition lasted for a week, the same treatment being continued. The vomiting stopped. On the eighth day the child began to show some consciousness, but was totally unable to move limbs. In a month the strabismus and contraction of the fingers on the palm were better, but both would increase on excitement. He put her on emulsion of cod-liver oil, and in six months she was able to walk, having had to learn this over. The family then removed from the city, but letters told him that the patient was doing well, but that any excitement brought on violent jactitation. Eighteen months after the sickness the child was operated on to rectify the strabismus, but without much success. The child is at present perfectly healthy in appearance, but her memory is defective, she is very nervous, and the strabismus continues. Has taken cod-liver oil all along. Dr. Magruder thinks that, considering the history of tuberculosis in both parents and the symptoms present in this case,

he is justified in calling this a tubercular meningitis.

In his dispensary practice, also, he has had several cases much benefited by counter-irritants, iodide of potassium and mercurials. The iodide must be given in fairly large doses, gr. x t. i. d. He mentioned a dispensary case which had dilated fontanelle and convergent strabismus. This child was able to walk, but not getting any better he had called in Drs. Burnett and Marmion. The child finally became entirely blind and the head increased in size. The child's mother had annoyed him greatly by begging on the streets and telling people that her child had been made blind at the Dispensary.

Dr. Smith asked Dr. Magruder if he considered a case of meningitis cured when the child was left blind and with a weak mind?

Dr. Magruder replied that he did so far as the meningitis, the lesion he was called on to treat, went.

Dr. W. W. Johnston said that it would be well to define the kind of meningitis talked about. It is a concomitant of so many states that such a question as Dr. Smith asked first becomes a pertinent one. Simple meningitis gets well. *Cerebro-spinal fever* is not meningitis, but a specific disease, and he believed the cases reported by Dr. Hamilton to be of this kind. The treatment he had used so successfully was addressed to the general symptoms, and in reality meningitis does not always occur in these cases. He had seen cases with symptoms such as Dr. Hamilton mentioned, notably in a family of refugees during the war. Several members died in rapid succession, some in a few hours from the first symptoms. On one or two appeared the purpuric spots which give it the name of *spotted fever*. There may be meningitis in Bright's disease, and tubercular meningitis is merely a symptom of general tuberculosis. When there are tubercles enough in the brain to produce these symptoms the cases die, and tubercle will be found in other organs.

In the case reported by Dr. Magruder of a girl recovered from tubercular meningitis, he does not consider her cured except of one single lesion, for there remains a weak mind and convulsions. The doctor has tried counter-irritants, calomel, iodide and bromide of potash, ice to the head, etc., but where he was sure of his diagnosis of tubercular meningitis the patients never got well. If they did get well it militated against its being tubercular. He said that he had noticed as one of the earliest symptoms that the patient began to stutter. Where a child had previously been talking all right it began to stutter and hesitate or remain silent. This comes before the constipation and other initial symptoms in many cases.

Dr. Hamilton said that he was aware that there was a difference between *cerebro-spinal fever* and *simple* and *tubercular meningitis*. They must, however, be very much alike, for many of the post-mortem appearances are the same in the two. J. Lewis Smith used synonymously cerebro-spinal fever, spotted fever and cerebro-spinal meningitis. It is also termed epidemic cerebro-spinal meningitis. In addition to the sequelæ already mentioned by him paralysis may follow; differing, however, from that which follows scarlet fever.

Dr. Hartigan asked Dr. Fry if there had been any jaundice in his case? Dr. Fry said there was none. Dr. Hartigan stated that in several cases he had observed this symptom, and he thought that he had been able to trace its source to the fact, which he had verified in several post-mortem examinations, that there was a deposit of tubercles around the bile ducts. As Dr. Johnston stated, tubercular meningitis was merely a symptom or accompaniment of general tuberculosis, which, when it attacked the brain, began at the base about the fissure of Sylvanus. The cerebellum and pons may also be attacked in the form of a yellow mass or tumor. Dr. Hartigan said that his treatment was generally with the liq. hydrarg., bichloridi and general hygiene. Iodide of potassium and iodoform were also recommended for their absorbent effect. There did not seem to be enough disease in the brain exhibited to account for the rapid death, and if the post-mortem examination was extended, this would likely have been confirmed.

Dr. W. W. Johnston said that he did not mean to correct Dr. Hamilton's pathology, but he still thought himself right in saying that cerebro-spinal fever is not a meningitis.

Dr. Hamilton said that in the beginning he had asked Dr. Smith to what form of meningitis he was alluding when he (Dr. S.) remarked that he knew of but few cases of meningitis which got well. Dr. Smith had replied *all* forms, and he (Dr. H.) had accordingly mentioned the above cases which he believed to have been meningitis. He had not in the course of his remarks alluded to tubercular meningitis.

Dr. Magruder said that he had seen iodoform recommended in the London *Lancet*. Here the scalp had been shaved and an iodoform ointment applied. Coryza had followed in a few days, and the ointment was given up.

Dr. Boarman asked Dr. Fry if his case had scrofula? He had lost several cases with this struma. He had also observed the *tâches meningitiques* in several cases. Dujardin-Beaumetz recites a case of recovery from tubercular meningitis

Dr. Bermann said he did not believe that an absolute diagnosis of tubercular meningitis could be made without a microscopical examination. He had had his attention called by a physician in London to the bright red and shiny appearance of the tip of the nose as one of the early symptoms of tubercular meningitis.

Dr. Hartigan said that the disease might be differentiated by ophthalmoscopic examination. If tuberculous, the so-called "cloudy swelling" or "tuberculous inflammation" of the retina might be found.

Dr. Fry, in closing the discussion, said that he had hoped some one would have mentioned the hemiplegia which was an interesting occurrence in his case. In reply to Dr. Boarman he would state that his case was not scrofulous. Hanoch mentioned that in acute tuberculous cases where calomel was used the patient might apparently get well, but there would be relapses and finally death. The post-mortem in such cases showed successive crops of tubercles and adhesions. He did not think that Dr. Magruder's case was tuberculous.

Stated Meeting, May 12, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

T. E. MCARDLE, M.D., SECRETARY.

DR. J. FORD THOMPSON presented the

SAC OF AN OVARIAN CYST

recently removed by him at Garfield Hospital. He presented the specimen to the Society on account of the size of the tumor and the condition of the patient. He saw the woman, with Dr. D. R. Hagner, more than two years ago. The tumor was then very large, and had been growing for a number of years. He advised an operation for its removal, but his advice was not heeded. She spent the last two years and a half in her room knitting and doing some light sewing. Some weeks ago Dr. Hagner again requested him to see her in the hope of giving some relief by tapping, as a radical operation was considered out of the question on account of the woman's condition. Dr. Thompson, however, advised an operation for the removal of the tumor, and she was sent to the Garfield Memorial Hospital on the following day. A consultation was held and it was decided to operate as the only chance of saving the patient's life. Dr. Thompson feared complications, and the irregular shape of the tumor gave him some uneasiness, as he was uncertain as to its partial solidity. The operation was performed on the afternoon of May 4, 1886. There were no adhesions or complications of any kind. The tumor, which had appeared on the patient's left side nine years ago, when she was 47 years old, and seven years past the menopause, was found to be a multilocular cyst weighing 40 pounds. The fluid contents weighed 38¾ pounds. The contents of the smaller cysts were, as usual, of a thicker consistency than the contents of the large cyst.

He ligatured the pedicle with silk and cut it with the thermo-cautery. The stump was dropped into cavity and three rows of sutures closed the abdominal wound, which was only three inches long. There was no shock, and the pulse and respiration improved immediately upon the removal of the tumor. She slept well all night, and to-day, the eighth after the operation, she says she is feeling splendidly. The sutures were removed this morning. The only complication has been an increase of temperature for several days, which Dr. Thompson considered due to the removal of pressure from the circulation, for there is no symptom of any other local or constitutional disturbance.

DR. J. TABER JOHNSON said he was glad Dr. Thompson had operated successfully upon a patient in such a low condition, for it would serve to encourage other surgeons and patients. It was remarkable that so large a tumor could be removed through so small an incision. We all know, however, that the smaller the incision the greater the safety to the patient; provided, of course, that it be not so small as to be bruised by the removal of the tumor. Three weeks ago he had removed an eight pound tumor through an incision two and a half inches long, and indeed two inches would have been long enough. The patient has had no trouble other than stitch-hole abscesses and a slight burn from the thermo-cautery. Otherwise she has suffered no pain at all. By severing the pedicle with the thermo-cautery, its raw surface is prevented from becoming attached to the intestines, omentum, or pelvic peritoneum. He related a case in his own practice where the pedicle had become attached to the peritoneum, though other causes accounted for the death of the patient. In some cases of ovarian cyst the fluid is so thick that it is with the greatest difficulty fluctuation can be obtained. On Friday last he opened a woman's abdomen expecting to find a fibro-cystic growth. It proved, however, to be a cyst with walls varying from an inch to four inches in thickness. The fluid weighed only eight pounds, whilst the sac weighed twenty. He was compelled to make an incision more than six inches long. He desired to call attention to one other remarkable point in Dr. Thompson's case, namely, the length of time the woman had suffered; for three years is considered the average number of years a patient will live with such a tumor.

DR. THOMPSON wished to add one remark concerning diagnosis. There was a peculiar sensation rather than a sound which he had detected several times in examining patients with large ovarian cysts. He could not describe it better than by saying it felt as if something slipped, almost producing a noise. Of course it was nothing more than the movement of the cyst against the parietal peritoneum. He believed it had some influence in deciding the question of a previous peritonitis. Whenever it was present in his cases there had been no adhesions. When the sensation was absent adhesions had been found.

DR. SWAN M. BURNETT presented

A SARCOMA OF THE EDGE OF THE ORBIT AND THE EYELID.

Also,

A MODIFICATION OF THE REFRACTION OPHTHALMOSCOPE.

DR. RICHEY thought the modification ingenious, simple, and useful.

DOMESTIC CORRESPONDENCE

"POTASSIUM CHLORIDE."

(Kali Chlorici, Merck, Darmstadt.)

TO THE EDITOR OF THE JOURNAL:

I have read with great interest Dr. Pattee's article in THE JOURNAL of July 24, concerning potassium chloride. The notoriously bad results following the use of potassii chloras have induced me to make use of the milder and more efficient preparation of kali chlorici.

For some years I have used this preparation with satisfactory results. I have repeatedly endeavored to bring this remedy to the notice of the medical profession. In the *Medical News* of May 19, 1883, I called attention to its valuable properties, especially as a remedy in various forms of throat diseases. In the *Philadelphia Medical Times*, of July 28, 1883, I

again endeavored to bring it into notice, and lately, in the *New York Medical Journal*, of May 8, 1886, I have urged its employment in the treatment of diphtheria.

I have found it difficult to explain to medical brethren that such a preparation really does exist, and that it is very different, in the action at least, from the harsher and less reliable preparation of the chlorate. The use of kali chlorici in Germany has won for it great favor, and it has certainly proved itself more valuable than the older and rougher preparation of the chlorate.

I find the following a convenient formula for its use:

R	Kali chlorici (Merck's).....	ʒiv	
	Syrup, simple.....	ʒvi	
	Aquæ distil.....	ʒvi	M
S.	ʒvi every hour.		

Very often the action of the chlorate of potash will seem decidedly poisonous, but the milder chloride will be found very useful and valuable. The imported preparation is the one I always use.

W. THORNTON PARKER, M.D.

Newport, R. I., August 3, 1886.

BOOK REVIEWS.

DICTIONARY OF PRACTICAL SURGERY by various British Hospital Surgeons. Edited by CHRISTOPHER HEATH, F.R.C.S., Holme Professor of Clinical Surgery in University College. Vol. I. Abdomen — Lymph-Scrotum. pp. 970; Vol. II. Macroglassia-Zygoma, pp. 884. Bound in one large 8vo. Volume. Philadelphia: J. B. Lippincott & Co. 1886.

This dictionary, which is as good as Quain's "Dictionary of Medicine," is made for that much protected and long suffering individual, the busy practitioner. Under the editorship of Mr. Heath, and with so many good surgeons to assist him the work could not be otherwise than good. An extended notice of such a work is obviously out of the question.

A MANUAL OF PRACTICAL THERAPEUTICS, compiled with Reference to Articles of the Materia Medica. By EDWARD JOHN WARING, C.I.E., M.D., etc. Edited by DUDLEY W. BUXTON, M.D., etc. Fourth Edition. 8vo., pp. XIX, 666. Philadelphia: P. Blakiston, Son & Co. 1886. Chicago: W. T. Keener.

Thirty-two years have elapsed since the first edition of this work appeared. Necessarily many changes have been made in that time, in drugs, in medicine itself, in the manner of giving drugs. The book has been correctly named "A Manual of *Practical* Therapeutics," for it is essentially practical, but in no sense a mechanical work for mechanical men. There are no formulæ of impossible compatibilities; one drug is taken up, its therapeutic applications considered in as few words as possible, and the drug next in alphabetical order is taken up. It is well indexed, both by diseases and drugs.

FRACTURES AND DISLOCATIONS. By T. PICKERING PICK, F.R.C.S., Surgeon to and Lecturer on Surgery at St. George's Hospital, etc. 93 Illustrations. Small 8vo., pp. VIII, 524. Philadelphia: Lea Brothers & Co. 188-?. Chicago: A. C. McClurg.

This is one of the Clinical Manuals for practitioners and students, which are being issued by the publishers, and thus far can certainly be placed at or very near the head of the list as regards its value. No one could expect that so small a book could be placed in competition with the classical work of the late Dr. Hamilton; but for all that it is an excellent book, of a most convenient size, well printed. The only possible objection to it and others of the series is that the blue of the cover is not fast. It is well illustrated, many of the illustrations being new and drawn from specimens in St. George's Hospital.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

BRITISH MEDICAL ASSOCIATION.—The fifty-fourth annual meeting of the British Medical Association seems to have been one of the most successful ever held. The Address of the President, and Addresses in the Sections were able, and most interesting. The visiting medical men from America were cordially received. "The proceedings," says the *British Medical Journal*, of August 14, "were greatly heightened in interest by the attendance of a delegation from the International Medical Congress, to be held in America, at Washington in September, 1887, to present an invitation to attend the Congress to the members of the British Medical Association. There have been some considerable internal dissensions among the organizers of this Congress, but it was very generally felt that this ought not to and could not prevent the invitation from America from receiving a cordial acceptance. This invitation, which was made at once in the name of the International Medical Congress by its President-elect, and of the American Medical Association by some of its principal officers, was received with that sincere and affectionate cordiality which both the purport of the mes-

sage and the sources from which it came already assured for it in advance. It lost nothing of dignity or of interest in the weighty and grave words of Dr. N. S. Davis, one of the oldest and most respected members of the profession in America, and one who holds very much the same relation to the American profession as Sir Charles Hastings long held to the profession in Great Britain. Dr. Davis was practically the founder of the American Medical Association, and is its most respected spokesman. The English profession may be sure that they will receive in America a welcome of unlimited hospitality, and of boundless kindness and brotherly affection. They will see there a great country and a great profession, which has sprung up and developed with a rapidity and to an extent which the world has never seen during the life-time of many who were present to hear the invitation. In our own country, Paget, Lister, MacCormac; in France, Charcot, Trélat; and in all the countries of Europe, leading representatives of science have accepted invitations to be enrolled on the list of Vice-Presidents. In America, the President of the United States, and the great officers of State, have signified their acceptance of the offices of Patrons of the meeting; and official recognition of the highest kind, such as is naturally due to a great gathering of medical men from all parts of the world, will be accorded to those who accept the invitation to attend the first great International Medical Congress which has ever been held in the United States."

MEDICAL INSPECTION IN BROOKLYN.—The Brooklyn commissioner of health, DR. ANDREW OTTERSON, has inaugurated in that city an admirable system of medical inspection and relief in the tenement-house districts, with special reference to the diseases of infants during the heated season. Ten physicians have been appointed, each assigned to a special locality, who are instructed to search for sick children needing attention and to care for them, furnishing medicine gratuitously where parents are unable to pay for it, and at a reduced price to those who can. They are to note the condition of premises and report where sanitary improvements are needed, give advice as to healthful manner of living, urge parents to take their children into the fresh air as much as possible, and give orders on the diet dispensaries for proper food when it cannot be obtained otherwise. The salaries of the physicians ($75 a month) are to be paid out of the emergency fund. As a contrast to this beneficent movement in Brooklyn, the New York Board of appointment this year refused to allow the appropriation devoted last year to similar uses, with the result of a marked increase in infant mortality in the crowded districts of this city.—*Sanitary News*, August 14, 1886.

MEDICAL AND SCIENTIFIC NEWSPAPERS IN JAPAN.—From recently published statistics of the Japanese press it appears there are seven medical papers, with a monthly circulation of 13,514; nine relating to sanitary matters, with a circulation of 8195; and two on pharmacy. There are seven devoted to various branches of science.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM AUGUST 14, 1886, TO AUGUST 20, 1886.

PROMOTIONS.

Lieut.-Col. David L. Magruder, promoted to Surgeon, with rank of Colonel, July 26, 1886, vice Brown, retired.

Major Chas. T. Alexander, promoted to Surgeon, with rank of Lieut.-Colonel, July 26, 1886, vice Magruder, promoted.

Capt. Henry M. Cronkhite, Asst. Surgeon, to be Surgeon, with the rank of Major, July 26, 1886, vice Alexander, promoted.

Freeman V. Walker, of Georgia, appointed Asst. Surgeon, July 27, 1886, vice Cronkhite, promoted.

Major J. C. Baily, Surgeon, granted one month's leave of absence. (S. O. 111, Div. of the Alantic, Aug. 17, 1886.)

Major Geo. M. Sternberg, Surgeon, granted leave of absence for fifteen days. (S. O. 186, A. G. O., Aug. 12, 1886.)

Major E. Bentley, Surgeon, granted one month's leave of absence, and at its expiration to report for duty as Post Surgeon at Little Rock, Ark. (S. O. 113, Div. Atlantic, Aug. 18, 1886).

Major W. S. Tremaine, Surgeon, sick leave further extended six months. (S. O. 187, A. G. O., Aug. 13, 1886.)

Capt. L. Y. Loring, Asst. Surgeon, leave of absence granted him in S. O. 59, Aug. 2, 1886, Div. of the Pacific, extended two months on surgeon's certificate of disability. (S. O. 189, A. G. O., Aug, 16, 1886.)

Capt. B. D. Taylor, Asst. Surgeon, when relieved by Surgeon Bentley to proceed to Jackson Bks., La., and report for duty as Post Surgeon. (S. O. 113, c. s., Div. of the Atlantic.)

Lieut. Phil. G. Wales, Asst. Surgeon, relieved from duty in the Dept. of the Columbia, and to report in person at hdqrs. Div. of the Pacific for further orders. (S. O. 62, Div. of the Pacific, Aug. 9, 1886.)

First Lieut. W. E. Hopkins, Asst. Surgeon, ordered from Ft. Lowell, A. T., to Angel Island, Cal., for duty as Post Surgeon. (S. O. 61, Div. of the Pacific, Aug. 6, 1886.)

Lieut. Wm. C. Borden, Asst. Surgeon, assigned to temporary duty at Ft. Bridger, Wyo., during absence of Asst. Surgeon Crampton. (S. O. 100, Dept. of the Platte, Aug. 9, 1886.)

First Lieut. Charles F. Mason, Asst. Surgeon, assigned to duty as Post Surgeon at Plattsburg Bks., N. Y. (S. O. 113, Div. Atlantic, Aug. 18, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 21, 1886.

Stone, Dr. E. P., commissioned an Asst. Surgeon in the Navy Aug. 5, 1886.

Wentworth, A. R., Asst. Surgeon, ordered to temporary duty, Navy Yard, League Island, Pa.

Lippincott, G. C., P. A. Surgeon, ordered to Annapolis, Md., for temporary duty as member Medical Examining Board.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED AUGUST 14, 1886.

Carter, H. R., P. A. Surgeon, granted leave of absence for thirty days. Aug. 12, 1886.

Glennan, A. H., Asst. Surgeon, granted leave of absence for thirty days. Aug. 9, 1886. To examination for promotion, Aug. 12, 1886.

Pettus, W. J., Asst. Surgeon, when relieved at Savannah, Ga., to rejoin station, New Orleans. Aug. 13, 1886.

CORRIGENDA.

In THE JOURNAL of August 21, in Dr. G. E. Frothingham's article on "Cocaine in Cataract Extraction," p. 205, 2d column, 5th and 9th lines from bottom, + 71 should be T + 1, and + 72 should be T + 2.

In THE JOURNAL of August 14, p. 193, second column, in the list of Vice-Presidents of the Section on Diseases of Children in the Ninth International Medical Congress, for Wm. G. Booker read Wm. D. Booker, of Baltimore, Maryland.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, SEPTEMBER 4, 1886. No. 10.

ORIGINAL ARTICLES.

DIGITAL EXPLORATION OF THE BLADDER, WITH REPORT OF TEN CASES, INCLUDING TWO PROSTATOTOMIES.[1]

BY WILLIAM T. BELFIELD, M.D.,

GENITO-URINARY SURGEON, COOK COUNTY HOSPITAL, CHICAGO.

The exploration of the bladder in the female by the finger, introduced through the dilated urethra is a recognized surgical procedure of long standing. By an incision from the perineum into the membranous urethra, a condition analogous anatomically to the natural structure of the female is artificially produced in the male; for the exploring finger can then be introduced at a point corresponding to the location of the urinary meatus of the female; that portion of the urethra which is solely a genital organ and peculiarly masculine—the penile portion—being thus avoided, the bladder of the male is thereby rendered quite as accessible as is that of the female. This method of exploring the bladder in the male by means of perineal urethrotomy—brought prominently before the profession as a systematic means of diagnosis some three years ago by Sir Henry Thompson and Mr. Whitehead—often affords the only means for the recognition and relief of obscure vesical disease. By it the surgeon is also enabled to differentiate between disorders of the kidney and of the bladder when all other diagnostic means, even the microscope, have failed; and he can often readily relieve a painful condition that has long been blindly and unsuccessfully treated under the comfortable and comprehensive designation of "cystitis." This term cystitis, by the way, should be relegated—with jaundice and dropsy—from the list of diseases to the catalogue of symptoms; since it is apparently always secondary to some tangible abnormality in the urinary or pelvic organs or in the spinal cord. Yet simple, safe, and valuable as the operation is, it can be made unnecessarily, and even with disastrous results. Like many other surgical proceedings, it is safe only when the surgeon possesses not merely the requisite manual dexterity but also an intelligent comprehension of the conditions involved. It is the object of this paper to offer some suggestions, based on experience and observation, as to the indications for *not* performing, as well as for employing, this operation.

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

During the past eighteen months it has been my lot to make a digital exploration of the bladder, by perineal urethrotomy, in nineteen adult males. In seven cases the exploration was incidental to the performance of membranous urethrotomy for stricture and afforded no particular information; in the remaining twelve cases the operation was made as a means either of diagnosis or of treatment, or of both, as shown in the following brief résumé:

Case 1.—George G., 58 years old, came under my care April 29, 1885. Has had gradually increasing difficulty in urination for four years. Two years ago he had complete retention; was relieved by catheter. On that occasion the urine drawn was he says "like glue." Some bleeding followed the withdrawal of the catheter. Since that time urination has been frequent, painful and straining; he often makes several unsuccessful efforts before the urine appears; is frequently compelled to use a catheter; urinates about every hour day and night. Defecation occasions severe pain in the perineum and penis. Has been treated for cystitis and for prostatic enlargement without appreciable improvement. On examination the prostate was found symmetrically and moderately enlarged; catheter shows 6 to 8 ounces of residual urine; the eye of the catheter is filled with clotted blood; a drachm or two of blood follows the withdrawal of the instrument. The urine becomes semi-gelatinous on standing a few minutes. With the microscope there are found some pus and many blood corpuscles. A diagnosis of villous growth from the prostate is made with entire confidence.

Operation May 1: The finger detected just to the left of the urethral orifice, springing from the prostate, a villous growth with a circular base about half an inch in diameter; and imbedded in its meshes two calculi as large as a pea and a bean respectively. Tumor and stones were removed and the site of the growth thoroughly scraped with the curette. Rather free hæmorrhage was controlled by hot water and pressure. Convalescence was uninterrupted; the perineal wound was completely healed on the 17th day. Patient resumed work. Urination was free and painless; he rose usually once during the night to evacuate the bladder. June 22 he observed for the first time a little blood at the end of urination; this was repeated several times up to the end of July, at which time I lost sight of him.

The interesting feature of this case was the diagnosis; the villous nature of the growth was predicted upon the tendency to hæmorrhage, the rapid clotting

of the blood, but especially upon the gelatinous appearance of the urine after standing a short time; that it grew from the prostate was considered almost certain in view of the pain along the urethra and in the perineum.

Case 2.—C. G., 17 years old, was referred to me in October, 1884. For two years, he had had gradually increasing frequency and pain in urinating; for one year the urine had contained considerable pus and albumen. On examination I found no objective symptoms in the urinary or genital organs; subjectively there was pain and tenderness of the urethra and bladder neck; urination every half-hour day and night.

Diagnosis not certain, but *tuberculosis of the kidney pelvis* is suspected, though no bacilli were found in the pus examined at that time.

At my advice, he went in November as a forlorn hope, to Southern California. For three weeks after arrival he improved rapidly in both and general symptoms; then after exposure in the rain, a decided aggravation of the disorder ensued. The local physician assured the patient and his mother that there was no tuberculosis about the case and that complete and permanent relief would be obtained by opening the bladder. In April he returned to Chicago and I was requested to perform the operation, but declined on the ground that it would be useless; for I was now enabled to confirm the diagnosis of tuberculosis by the discovery of the characteristic bacilli in the pus expelled with the urine. Finally, however, when it became apparent that the patient and his friends were determined to have the operation performed by some one, I consented. May 18 I explored the bladder with absolutely negative results. A slight improvement in the local symptoms lasted for some weeks.

Examination November 21 showed nodular enlargement of the right epididymis, typical of tubercular disease. The patient's local symptoms were about the same as before, his general health somewhat worse. In this case, the important feature was the diagnosis, which was necessarily somewhat doubtful until the bacilli were discovered in the urinary pus; and even then the possibility that an additional undiscovered factor might be present—a vesical calculus or growth—was a reason for operation. The case illustrates the established but often neglected fact, that extreme irritability of the bladder and tenderness of the urethra can be caused by disease of the kidney-pelvis.[1] An unpleasant result was a persistent, though very slight perineal fistula, caused by my failure to remove the drainage tube until nearly three weeks after operation.

Case 3.—Michael H., 63 years old. Gives a history of cystitis for four or five years. Complete retention two years ago. Admitted to County Hospital, April 14, 1885, for retention; relieved by catheter. Was sounded for stone with negative result; the case was regarded as one of enlarged prostate, and the bladder was irrigated daily. May 1 was transferred to my service; found him very weak, emaciated and feverish, temperature ranging from 101 to 104, pulse from 110 to 140; has had irregular chills for two weeks past. On examination per rectum I could detect no prostatic enlargement, but felt a sac about as thick as a lead-pencil containing numerous small calculi, and extending from the left apex of the prostate upward along the rectum as far as the finger could reach. My diagnosis was concretions in the seminal vesicle and consequent cystitis. As the patient's condition was critical I determined upon immediate operation.

May 1, with the assistance of Drs. Miller and Fenger, I explored the bladder. Upon inserting the finger into the bladder I found that the concretions were more plainly felt there than by the finger in the rectum. Hence we concluded that they must be contained not in the seminal vesicle, but in a diverticulum of the bladder. Yet it was impossible to secure a direct contact with the stones, as they were everywhere covered with mucous membrane. A little search revealed at the lower extremity of the mass, a slight depression in the surface of the bladder. The mucous membrane at this point was torn by the finger-nail, which thereupon came into contact with a calculus. The opening was enlarged and calculi ranging in size from a pea to a hazel-nut were scooped out of the cavity, one after another, until seventeen lay upon the table. The patient rallied nicely from the operation; his pulse and temperature became nearly normal, and for two weeks I entertained, in spite of his previous condition, a hope that he might recover. At the end of the third week, however, he began to exhibit an evening rise of temperature, and he finally died June 12, six weeks after the operation.

Case 4.—John A., 38 years old. Was admitted to the County Hospital October 16, 1885. For over a year he has been compelled to urinate frequently and has had pain above the pubes and along the urethra. These symptoms gradually increased and were repeatedly complicated with retention of urine; during the last six months he has constantly carried, and frequently been compelled to use, a catheter. On admission he is attempting to urinate, with but little success, every fifteen minutes day and night; and complains of constant and severe pain, aggravated during urination, along the urethra, in the glans and behind the symphysis. The urethra is so tender that he yells with pain upon any attempt to introduce a rigid instrument. With a soft catheter it is ascertained that there is no decided stricture and that the entrance to the bladder is unobstructed. There is no prostatic enlargement; the urine contains a little pus.

Diagnosis: A tumor, nature unknown, though probably neither malignant nor villous, growing from the prostate.

October 23 I explored the bladder. The finger on entering the bladder pushed before it a smooth body which was found to be of doughy consistence, globular form, about as large as a walnut, and attached by a rather narrow pedicle to the upper margin of the urethral orifice.

The symptoms were thus clearly explained; for

[1] This patient, who passed out of my hands a year ago, died August 16, 1886. At the autopsy there was found some tuberculosis of both lungs and advanced tuberculosis of the right kidney, but little of the renal tissue remaining; the left kidney was enlarged, fatty, but not tuberculous; prostate and bladder apparently free from tubercles.

Until shortly before death there were no symptoms, subjective or objective, to indicate which kidney was the seat of the disease.

the tumor—suspended against the urethral orifice by its narrow pedicle—evidently acted like a valve; for while it was readily pushed aside by the catheter from without, it effectually prevented the escape of urine from within the bladder, and thus produced the symptoms of a tight stricture.

Query—Are there not possibly cases of similar nature circulating around among surgeons and labeled "spasmodic stricture"?

Presuming that it was a fibrous or mucous polyp, I inserted through the wound a small stone forceps with the intention of twisting off the pedicle. While I was introducing my finger alongside of the forceps in order to control its extremity, about half an ounce of watery fluid (which I then supposed was urine) escaped from the bladder. I then discovered that the tumor had disappeared; but by a careful search I found a very delicate membrane, evidently a collapsed cyst, resting against the bladder wall. As I could not seize it with any instrument at my disposal, I tore the sac as completely as possible with the finger nail.

For two days subsequently the patient suffered excruciating pain along the urethra; but his convalescence was unusually rapid, the wound being entirely healed on the 9th day. At first he was compelled to urinate every two or three hours, day and night; but this discomfort—apparently a mere habit of the bladder—gradually disappeared. For four months past his urinary functions have been perfectly painless and normal.

Case 5.—M. W., 38 years old, was admitted to the County Hospital November 3. For several months he had experienced pain and difficulty in urinating, alternating with incontinence. His urine contained much pus; his bladder was sometimes distended, and at other times empty; there was no stricture nor prostatic enlargement. For several weeks before admission he had suffered from irregular chills followed by fever and sweating; his general health was much impaired; his condition in short was that described as "typhoid."

It was evident that he was suffering from cystitis and pyelitis, though I was unable to recognize the cause; nevertheless I considered perineal urethrotomy justifiable as a means of relief from this condition.

November 14 the bladder was explored and drained; nothing abnormal was found. Yet the expected results were attained; the chills and fever ceased, pulse and temperature became normal, the appetite returned, the urine became clear, in short the cystopyelitis subsided. After his convalescence from the operation when the patient again began to walk, I discovered the cause of his cystitis—namely an incipient transverse myelitis. Had he not been confined to his bed upon admission to the hospital, I would probably have detected this lesion; yet I would just as certainly have performed the operation, since without it he would soon have died of suppurative nephritis, the danger of which was now removed.

Cases 6, 7 and *8* were unfortunately instances of malignant tumor of the prostate and bladder. Two were men aged 69 and 58 years, respectively; in each of these the diagnosis—which was rendered almost certain by the history and physical examination—was made absolute by the discovery of numerous atypical epithelial cells in the urinary sediment under the microscope. The older of these two men was already bedridden from exhaustion when I first saw him; in this case I made perineal urethrotomy, and inserted a drainage-tube merely to obviate the agony of frequent urination. Such great relief was secured that the drainage was maintained until his death, three months later.

In the second case the patient was seen at an early stage of the malignant disease. Having located the growth in the left lobe of the prostate, I explored the bladder to ascertain the feasibility of an attempt at removal, intending, if excision of the neoplasm with the cautery seemed practicable, to make also a supra-pubic cystotomy for additional facility of manipulation. I found, however, that the growth not only involved the left lobe of the prostate, but was also prolonged, as a small, firm ridge, along the posterior wall to the vertex of the bladder. I therefore made no attempt at removal. The wound healed readily; the patient is still—four months later—able to walk, though steadily sinking under the malignant disease.

The third case of prostatic cancer presented an instructive feature. It was that of a man 31 years old, admitted to hospital with a violent and fetid cystitis and almost complete retention of urine. Per rectum the prostate was found greatly and irregularly enlarged, hard and knotty, making the diagnosis easy. Although large instruments readily entered the urethra as far as the prostate, I was unable to pass even the smallest catheter over the prostatic obstruction. I performed membranous urethrotomy and inserted a drainage-tube into the bladder.

Almost complete suppression of urine ensued; and in spite of fomentations to the loins and pilocarpine internally, the patient died of uræmia on the fourth day. At the autopsy there was found an epithelioma involving the prostate and floor of the bladder; the vesical walls were enormously hypertrophied, the kidney calyces were greatly dilated, and there was a pipe-stem calculus in the left pelvis. This case exemplifies the danger—not yet sufficiently recognized—of emptying the bladder in cases where, from long obstruction to the exit of urine, the bladder walls have become hypertrophied and the kidney pelves distended.

Case 9.—X. C., 59 years old, was admitted to hospital February 3, 1885, in the last stages of chronic cystitis, from which he had suffered for fifteen years. He had repeatedly had complete retention of urine; for five years has been obliged to urinate every hour or oftener, day and night, and for more than a year past has been practically unable to void urine except through a catheter. On admission he was in a typhoid state and suffering from irregular chills, fever and sweats. After vainly trying for several days to improve his condition by washing out the bladder, I made perineal urethrotomy February 9, and drained in the usual way. Immediate and complete relief was secured; on the second day his temperature became and remained normal.

Finding the cause of the cystitis in an immense

myoma—or so-called hypertrophy—of the prostate, I seized the opportunity to execute a plan which I had long cherished, namely, to make an artificial channel through the obstructing portion of the prostate.

Accordingly, two weeks later I reopened the perineal wound and with the galvano-cautery made a channel through the prostate sufficiently capacious to admit easily an ordinary lead pencil. To my surprise and gratification the patient showed absolutely no reaction, his temperature never exceeding 99° F. After the wound healed he easily retained urine three to four hours, and passed water without pain and without a catheter; the residual urine was reduced from eight ounces to half an ounce, showing that the bladder almost completely emptied itself; the urine was quite clear, even after standing. In short, he left the hospital April 3 a new man.

In consequence of the habitual retention of a little urine, I directed him to use the catheter once daily, an injunction which, after returning to his home, he usually ignored. As a consequence he had on two occasions during the following summer slight indications of cystitis, which, however, quickly subsided when the catheter was used once or twice daily.

September 12 he suddenly manifested signs of acute uræmia, of which he died, nearly seven months after the operation.

The uræmia was explained at the autopsy by the discovery of very small, contracted kidneys. I also secured the bladder and prostate, which are here submitted for your inspection.

Case 10 was a man 68 years old, with the usual history of cystitis from prostatic enlargement, extending over seven years. Although he was in a very exhausted condition, I attempted to repeat the operation of channeling the prostatic obstruction practiced successfully on the former patient (Case 9). In the midst of the operation the battery failed, so that my design could not be executed. The patient's ability to urinate and his comfort were decidedly increased by the incomplete operation; but his health did not improve, and he died some two months later.

The value and safety of digital exploration of the bladder through the membranous urethra as a means of diagnosis and treatment, are so clearly exemplified in these cases that I shall expend no time in expatiating upon them. I would merely remind you that the cases are in no wise selected ones, but are recorded as they successively occurred; that the majority of the cases belonged to that class of ill-conditioned individuals who drift into the wards of a large charity hospital; and that five of the ten were brought into the hospital in an apparently hopeless condition, to die.

Of the ten, three died within two months after operation; in one of these—the case of prostatic cancer, where death ensued in four days, from uræmia—the fatal result was unquestionably hastened and directly caused by the operation, though without operation this man could not have lived many days. In the two other fatal cases—where death occurred some two months later—it is just as certain that the operation prolonged life; and had it been performed a year or two earlier, before the patients had become so exhausted, it would have been extremely beneficial.

As essential preliminaries to a diagnostic exploration of the bladder, I would adduce two considerations:

1. It should not be performed as a diagnostic measure until it is reasonably certain that the seat of the difficulty is in the bladder, or until all other and less radical diagnostic means, including the microscope, have been exhausted; otherwise it may yield only disappointment and regret to both surgeon and patient. For it must be remembered that an irritable condition of the bladder can be produced by causes without as well as within this viscus, such as stricture of the anterior urethra, tuberculosis or calculi of the kidney-pelvis, etc. In such cases the morbid symptoms may be exhibited chiefly or exclusively by the bladder, while the lesion lies chiefly or exclusively elsewhere. As examples I would mention my own case of tuberculosis, and the two cases of exploration of the bladder which I have seen performed by other surgeons; in both of these the operation was ill-considered and fruitless, since in each the lesion evidently lay in the renal pelvis.

2. The operation should never be performed until the bladder has been accustomed to complete evacuation, by catheter or otherwise. If in consequence of a tight stricture or prostatic obstruction, the bladder is much hypertrophied, membranous urethrotomy is dangerous, not from a probability of urinary extravasation, but simply because a cysto-pyelitis of more or less gravity—possibly even anuria—usually follows the sudden removal of the accustomed high pressure in the bladder and kidney pelvis. Examples are found not only in my own fatal case of anuria, but also unfortunately in the daily introduction of catheters for retention, division of tight strictures, lithotomies, etc. Therefore, before the bladder is explored in a case with tight stricture, prostatic enlargement or other cause of vesical hypertrophy, the bladder should be gradually accustomed, in the course of weeks, to complete evacuation; the stricture should be enlarged; or the prostatic obstruction should be overcome by the habitual use of the catheter until all residual urine is withdrawn. Then, and *not till* then, can the surgeon rest assured that digital exploration of the bladder from the membranous urethra, whether it afford much or little benefit, will at least be safe and devoid of injury.

ON THE RADICAL CURE OF INGUINAL HERNIA. A REVIEW OF THE EXISTING STATUS OF THE OPERATION, WITH REMARKS ON ITS PAST HISTORY.[1]

BY JOHN B. HAMILTON, M.D.,

SUPERVISING SURGEON-GENERAL OF THE MARINE HOSPITAL SERVICE, WASHINGTON, D. C.

Few subjects are more attractive to the surgeon than that of hernia, whether viewed from the standpoint of pathology or that of surgical therapeutics. The ablest surgeons in past ages, as I shall presently

[1] Read before the Chicago Medical Society, August 16, 1886.

show, devoted much of their attention to the subject, and although time has passed, and tome and thesis become dusty with age, and in many cases the theories themselves misty with the changes of time, and in others laid forever at rest by the solid anatomical facts hurled against them, there has been a golden thread of truth extending from the earliest time to our day. But this thread, however bright and shining, is only a thread; and while some things are proved concerning the guiding principles of the operation, yet the disease continues to afflict mankind, and until the ushering in of antiseptic cleanliness in all operations, the weight of surgical opinion in our day was against the attempt to cure hernia. Several such periods have come and gone in the history of this operation, and while nothing in history of the past may seem to warrant the disturbance of the present surgical lethargy, yet it *is* worth while to get our bearings, as the mariner takes a reckoning to find out where he is and to determine his future course.

Dr. Morell Mackenzie must have been secretly thinking of hernia when he commenced writing that able article in a recent number of the *Fortnightly Review*, entitled "Is Medicine a Progressive Science?" Let us then get our bearings; take from unused shelves the musty records of former surgeons, and having found where we are, let us see if some headway may not be made to remove the reproach. That the disease is sufficiently prevalent to be of interest Heaven knows. Dr. Baxter's tables show that out of 334,321 recruits and substitutes examined by the recruiting officers during the war of the rebellion, more than 17,000 were rejected on account of hernia. George Hamilton, of Liverpool, estimated that in England alone there were one and a quarter millions of persons suffering from hernia, and 88 per cent. of these hernias are inguinal. The London Truss Society, during the first twenty-eight years of its existence, had issued over 83,000 trusses to the ruptured in the city of London alone, and from information received by me since this paper was commenced, I find that two factories in the city of Philadelphia manufacture and sell from 216,000 to 250,000 trusses per annum! Nor do all the ruptured wear even this badge of incurability. Think of all the old incarcerated hernias and concealed hernias, where trusses cannot be worn, and where from fear of pain or from penury the patient will not or cannot buy a truss! Let surgery, then, apply itself anew to the task before it; for there is yet a world to conquer. Let it not be dismayed by the fatalistic evolutionists who hold that the weakness of the abdominal walls is a certain evidence that man has been evolved from beasts which did not walk erect, and that in the fulness of time when man has been long accustomed to walk upright, the abdominal walls may become tougher, or enveloped in a cartilaginous or bony case. It may be considered a little impatient, but I for my part have no desire to wait. I wish to stimulate experiment and inquiry, and when the dawn of that time shall come for which evolutionists sigh, when man shall be physically perfect, and it shall be said of this beautiful city, as of Troy—Chicago was—let it also be said of this disease: there was once a question as to how to cure a very painful and fatal disease, now happily obsolete, but the surgeons of that day settled it. This much is introductory; let us now briefly look up the history of the past, which, thanks to the labors of Sprengel and others by whom it has been compactly and succinctly stated, the task is an easy one.

HISTORY.

Celsus was the first surgeon to fully define the tunics of the scrotum and testicle, and he had definite ideas about the operation for the cure of hernia. He used cauterization and a bandage, probably a spica. Sprengel thinks Celsus borrowed his notions from Alexandria, for Leonidas of Alexandria had exploded the doctrine of the rupture of the peritoneum, and taught the practice of cauterization; he also in some cases scarified the parts and used astringents.

Paulus, who followed Celsus in almost paraphrastic terms, did not mention him, and the able translator of Paulus (Francis Adams), remarks, "But when did a Greek writer ever acknowledge himself under obligations to a Roman?" Thus, if you will pardon the digression, you will see that the Eastern custom of ignoring the progressive West, of which custom some of you may have heard of late, is of rather ancient date.

The Arabians, Hali Abbas and Ali, the son of Abbas, used astringents as topical applications, and in severe cases they practiced the actual cautery.

Ligature of the sac had been practiced from an early day, and Paulus and his Arabian followers described the operation. The red hot iron for many centuries was the favorite remedy.

Maupas was the first who recorded himself in favor of making a straight incision directly through the rings, performing a gastrorraphy, and stitching up the wound.

Lafranc, who flourished in 1296, favored castration according to the ancient methods, and the fastening of the stump as a plug in the wound. He, however, had three methods, one the thrusting of red-hot needle points into the tissues about the hernia, and he invented the first compression forceps, or clamp. Guy de Chauliac, while criticizing the methods of his predecessors, and also that of a certain Bernard Metis who, before completing his incision, tied the cord with a gold thread, the modern point Dore, still believed in the caustic, and occasionally the arsenical paste. He recommended rest in bed and strong compression. It was desirable, in the opinion of surgeons of that period, to provoke suppuration at the ring.

The method of operating for the cure of hernia being nearly always accompanied with ablation of the testicle, now fell into disuse, and quacks alone practiced any of these operations. A traveling Spanish hernia-cutter was brought to the notice of Alexandre Benedictus, who performed some happy cures by the use of a silk seton, fastened to an ivory button. The same inhabitants of higher Italy who were celebrated in the Middle Ages for stone-cutting, were also very successful as traveling herniotomists, if contemporaneous accounts may be believed, and the

methods were kept a profound secret; but as late as 1633 Jean Baptiste Cortesa relates that he saw at Messina a certain Ulysse de Norcia apply a caustic substance, the parts consumed by it, and a very deep scar result. Joseph Covillard saw a "vagabond" cure a hernia by caustics and the ligature. (Sprengel).

Some of these peripatetic herniaotomists, after opening the sac, replaced the testicle in the abdomen, and drew the ring together with a gold thread. Scultetus relates that in his time the anabaptists frequently performed this operation in a similar manner. Fallopius practiced the ligature and castration. He did not object to the methods of his predecessors, but limited and modified them. He restored the gut after incision, by taxis and the use of oil of rose with white of egg; he used gold thread when he ligated the cord, and he scarified the rings. Ambroise Pare was the first to absolutely abandon castration. He used astringents, a bandage with iron filings to the surface as a counter-irritant, and powdered iron in the wound. He performed gastrorraphy in aggravated cases, and introduced a gold wire to separate the cord from the intestines.

About this time the treatise of Pierre Franco appeared, which in the light of modern anatomy once more dissipated the ancient error that hernia was always accompanied with a rupture of the peritoneum.

Freytag, a Zurich surgeon, was the first to practice dilatation of the rings in strangulated hernia, having first made incision. He then attached the peritoneum to the ring with numerous sutures.

Abraham Cypriaan, of Amsterdam, systematically dilated the rings with the finger until reduction was effected in the case of strangulated hernia, then with a two-edged knife he separated all the tissues about the ring and canal.

Nicholas le Quin, of Paris, and his nephew Antoine le Quin, appear to have introduced the truss about the year 1680, although the spica bandage had been used from the earliest times. In the time of Louis XIV operative procedures by the faculty had once more fallen into disuse, and the quacks reaped a harvest. A prior of Languedoc, named Cabrieres, communicated to the monarch under promise of secresy during his life time, an infallible mixture which was never-failing in its power. This secret, when brought to light, was found to consist in the administration of muriatic acid diluted with red wine, and the external application of a pitch cerate under pressure.

Dionis wrote a thesis on this subject in which he recommended the opening of the sac with caution; he taught the principle of dilatation of the ring, and he tied the omentum. After the operation he introduced into the ring a large dossil soaked in yolk of egg and oil, kept it in place by a compress of charpie adjusted by a spica bandage.

Vauguyon was a close follower of Dionis, but he described the technique of the operation in more detail. He used the grooved director, not only for raising the tissues for division, but also for dilating the ring. He, after the restoration of the intestine, scarified the ring, and applied a bandage like Dionis. The long controversy as to whether the peritoneum was really ruptured or not, was not settled until the beginning of the eighteenth century.

Michel Louis Renelaulme de la Garanne, while insisting there was a rupture of the peritoneum, operated in all cases except those of incarceration, by the operation as performed by Dionis; he used in addition to the ordinary bandage, a suspensory bandage. This was, many years later, brought forward by Mayor as a new procedure.

While French surgeons had thus come to follow a definite line of practice in these cases, the rest of the world, so far as known, still followed the Celsian plan of castration with cauterization.

Françoise Wiedeman, in 1719, was the first German to defend the new treatment of hernia adopted in France at this period. Jean Henry Freytag, of Switzerland, in 1721 rejected the castration and as well the point Dore. He still favored the scarification as practiced by his father, Jean Conrad Freytag, and recommended the excision of the projecting portion of the omentum, when necessary.

Mauchard in operating recommended that the bistoury be held flatwise (after the sac had been opened carefully), and he did not raise the membrane with the cellular tissue, when he had pierced the peritoneum, he introduced a sound, lifted the membrane and examined the state of the intestines. He then scarified the ring, and tied the sac with a waxed thread.

Heister recommended a truss, which, upon reference to the plate, is seen to be an oval pad attached to a strap, evidently intended to buckle around the waist.

He approves of Petit's operation; by this operation Heister says Petit cured a "tailor who was well within five days of the operation." Heister, however, advises that the bandage alone be trusted in large hernias. Incarcerated hernias he endeavored to reduce by the taxis, and having done so, he applied the "spica bandage, which should not be left off by the patient for many years, and if he be old, it should be worn during life. I have sometimes known a clyster of the smoke of tobacco succeed in relaxing the parts, when others have failed." "A large clysma fumosum," he says, "of the common English or weak tobacco was injected into a poor patient under this disorder, but with no effect, but the smoke of strong Virginia tobacco quickly gave the patient a stool, and the prolapsed intestines soon returned into the abdomen of themselves." Heister, it is to be observed, when he did operate, anticipated certain so-called antiseptic precautions, by the cleanliness he required, and the shaving of the groin as preliminary to the operation. He always opened the sac and returned the hernia, without division if he could; if practicable, he divided the ring with care and applied the pledget or dossil of lint and a spica bandage; but then, as now, there were many attempts to escape the knife, the bandage, and the truss, and John Douglass states, in his "Syllabus of Chirurgical Operations," that a man named Little-John made great reputation throughout England by a secret remedy for which he was paid five thousand pounds by King George the First, who also added to this sum an annual pension of five hundred pounds.

When this remedy was promulgated, it was found to be cautery with sulphuric acid; and when the granulations sprung up they were touched with the *lapis infernalis*. A bandage to retain a plaster on the cicatrix completed this rather too highly appreciated discovery. If Little-John had lived in this day he might easily have increased his emoluments by starting a "sanitarium." We recognize this cauterization plan as an old acquaintance. And so the changes have rung, the same old story with but few variations from Celsus down. I will not weary you with continuing in this history an account of the methods of Alexander Monroe, Jean Georges Wagner, of Lubek, Lafay, Samuel Sharp, and Tacconi, for they were all simply modifications of the preceding plans. It was not until near the middle of the eighteenth century that surgeons began to cut off the gangrenous portions of intestines in cases of strangulated hernia. Claud Amyand, Montabourg, Peyronie, Ramdohr, Mery, were among the first to practice and recommend this procedure.

The glance we have thus given at what may now be termed ancient surgery of hernia, shows clearly enough how little may be hoped for as new, and yet how infinite the variations of the few fixed principles. If I do not quote, among the moderns, Percival Pott, Sir Astley Cooper, Benjamin Bell, Mohrenheine, Barthol and Saviard, Robertson, Dessault and Cline, it is simply because these excellent surgeons, some of of them masters, simply threshed the old straw. The Spanish surgeon Antoine de Gimbernat, in his "new method" of operating in crural hernia, Madrid, 1793, did develop some originality in description of the anatomy of crural hernia, but the field seemed to be worked out. Little change in opinion or sentiment took place until about 1840, when the method of creating inflammation of the whole canal by injection was again brought into notice, but it will now be more convenient and easy to follow if the different operations are adverted to seriatim.

Castration, first proposed by Celsus, and, as seen in the foregoing section, followed by surgeons for several centuries, has been long abandoned, although in cases where the hernia co-exists with disease of the testicle, as in the case reported by Nott, of Mobile, in 1847 (in which the lead wire was used), castration may very properly be an accompaniment of the operation.

Cauterization was formerly used by the Moxa to the surface, by red-hot irons, and by red-hot needles thrust into the tissues, and by mineral acids. Almost every known caustic has at some time or another been used for the cure of hernia. The galvano-cautery was proposed by Dr. John C. Minor, of New York (*Am. Jour. Electrology and Neurology*, 1879).

Topical Applications.—These have been the favorite remedies of charlatans in all ages, and have been occasionally used by the faculty, but being utterly unscientific in principle, are now abandoned.

Ligature of the Sac.—This operation is now practiced in connection with the so-called "antiseptic" operation, but in the modern operation the sac is opened, while in that of the ancients the sac was frequently ligated without opening. Ambroise Paré is erroneously given the credit of the priority in this procedure. Malgaigne speaks of various kinds of ligature, including catgut. The elastic ligature has been brought forward. Molliere, in "Memoires Sociéte des Lyons, 1877," proposed to occlude the neck of the sac by the elastic ligature. His conclusions were that the ligature of the sac was usually necessary and gradual ligature was the best method, and, in passing, it is proper to revert to the fact that Paulus Ægineta proposed and practiced sac ligation. Gallaud, in 1878, favored the elastic ligature.

The Royal Suture.—The sac being entirely exposed, it was raised and stitched, after which the portion outside the suture was cut away. The term "royal" is somewhat whimsically said to have proceeded from the fact that the King's subjects were saved thereby.

Scarifications.—This practice is a very ancient one, and has been occasionally practiced down to a very recent date, with excellent results. These scarifications were at first practiced on the sac alone, but finally on the pillars and the entire canal. Dr. G. N. Fitch, of Chicago, in 1845 scarified the neck of the sac and produced a cure (*Indiana and Illinois Medical Journal*, N. S., Vol. IV). Guerin was probably the first to practice subcutaneous scarification. The so-called Heatonian method has, as one of its advantages, that the tissues about the pillar and canal are punctured.

Invagination (a) *Without Suture.*—This practice has for its object the occlusion of the inguinal ring by the fascia and sometimes by the integuments. Leroy D'Etoilles proposed invagination without suture, the invagination to be retained by a plug of rubber and retained by a bandage. Aitchison, in the *Indian Lancet*, September 15. 1860, proposed to invaginate the scrotum by a rubber tube carried into the ring by a solid plug. The plug was then to be withdrawn and the tube filled with air and retained with a bandage. This method he claimed could be used with or without suture, but this procedure was in fact long antedated by the truss pad of Dr. P. H. Cabell, of Alabama, who had constructed a truss pad with what he called a "finger-like process." (*Virginia Medical and Surgical Journal*, vol. iv, 1855.)

Invagination (b) *with Suture* has been practised for a longer period, and has been very successful. It in principle forms the basis of many of the more famous operations, such as Gerdy's and Wutzer's. In Gerdy's operation the scrotum is invaginated on the finger and pushed into the ring. A double-threaded needle is thrust into the bottom of the cul-de-sac, brought out through the abdominal parietes, the needle withdrawn, reinserted at a little distance, withdrawn and the threads tied. This cul-de-sac, if left to itself, would prove a nuisance on account of the retention of moisture, and the skin was therefore denuded of its cuticle by repeated cauterizations with ammonia, and when granulations sprang up the surfaces were made to adhere by pressure. Bransby Cooper proposed to destroy the cuticle of the invaginated portion by actual cautery at a single operation. This method has fallen into disuse, although occasionally revived in our time. The late Dr. Geo. T. Allen, of Springfield, Ill., reported fifty cases cured by what

was practically Gerdy's method. (Trans. Illinois State Med. Soc., 1867–8.) Wutzer proposed to invaginate the scrotum by a wooden plug having a curved needle at the end. After the tissues were invaginated and the needle thrust through the tissues, a fenestrated metal plate was placed on the outside, with the needle projecting through the fenester, and clamped down tightly by means of a screw at the end of the plug. The apparatus is kept in place for about a week and a truss worn for some months. In Wutzer's first series of cases there were fifty-seven cases and no deaths. This operation was very popular in its day, but is now superseded by a method which might well be termed the combination method, by which I of course refer to Wood's method, which not only invaginates the fascia but draws together the pillars. While all these methods have their greatest success in small herniæ and bubonoceles, yet both Gerdy's and Wutzer's are absolutely valueless in those which are so large that an ordinary invagination will not occlude the opening. As Wood's operation is so recent and so well known, I will not in the presence of this audience stop to describe it. Mr. Wood's first case is recorded in the Transactions of the Medical Society of King's College, 1857–8.

Lawrence, who wrote the well known treatise on hernia, is frequently but erroneously given the priority of suggesting the drawing together of the inguinal rings by suture. The priority is probably due to those ancient surgeons who operated by incision through the canal. The varieties of suture used are almost endless, and it must provoke a smile to see in every country this operation when performed by any of these sutures described as new. In our country we point with pride to the fact that Physick recommended animal sutures. Levert, Nott and Gross used lead and silver wire, but it is known that Rhazes, the Arabian, described sutures made of harp or lute strings, with which he stitched wounds of the abdomen, and that there is no doubt that metallic suture wires of the less noble metals are really contemporaneous with the gold threads. To prevent the alleged untying of the catgut ligature, MacEwen, of Glasgow, in 1880 proposed to soak them in chromic acid.

Wood's operation has lately taken a new start by reason of the greater care in making incisions; insuring cleanliness; apposition of the parts, the use of germicide solutions and the excusion of air from the wound. Dr. H. O. Marcy, of Boston, on October 11, 1871, reported cases treated by this method. Prof. Fayrer, of Calcutta, in *Medical Times and Gazette*, April, 1872, reports fifty cases, of which forty-two were cured. Prof. Annandale and Sir William MacCormac give the priority to Dr. Chas. Steele, of Bristol, but Dr. Steele's first case was reported in the *British Medical Journal*, Nov. 7, 1874, more than two years after those of the Boston surgeon.

Marcy and Isidor Israelsohn are undoubtedly the pioneers in this application of antiseptic surgery.

Dr. Raye, of Calcutta, in the Trans. Med. Soc. of Calcutta, 1883, reports sixteen cases with twelve cured, one died, and two relieved, one under treatment on the date of the report. Swinton Edwards in 1884 reported three cases cured by this operation. He used drainage, iodoform, gauze packing, and an elastic bandage.

In a discussion in the Liverpool Medical Institution in 1883, opened by Mr. George Hamilton, Dr. Alexander stated that he had performed the radical cure thirty times without any death. Mr. Banks stated that he had operated on more than fifty cases, but preferred wire to catgut. Mr. Puzey thought that the patients should be kept in bed for a considerable time, as if the patients got up too soon the tumor reappeared. This caution, in my judgment, is a necessary one, for in one of my own cases operated upon in May, 1886, at the Providence Hospital, Washington, an inguinal hernia was converted into a bubonocele by the reopening of the internal ring. The patient in this case was allowed to get out of bed as soon as the wound was healed.

In a debate on the radical cure of hernia in the Academy of Medicine in Dublin, March 12, 1884, there was entire agreement both as to the propriety of the operation and of the excision of the sac. As to the general results of Wood's operation, Mr. Wood himself reports that out of 339 cases without special antiseptic precautions, and with wire sutures, ninety-six were cured, seven died, and fifty-nine failed; in the remainder the result could not be ascertained. The proportion of the unknown cases was presumably in about the same ratio. Nussbaum states that in half his cases the hernia returned, and in those reported by Leisrink one-third returned. There can be no doubt, then, that while much good has resulted from the operation, there is yet much needed to perfect its details. I wish it understood when I speak of Wood's operation, I mean as at present performed; that is, the "open" operation. Dr. Robert Abbe, of New York, recently reported twenty-one cases of this operation, with two deaths; in one case, however, the death was due to suppuration following an operation for varicose veins of the leg, which had been operated upon at the same time. His cases were too recent to give any account of the permanency of the cure.

One modification of Wood's operation has been proposed by Mr. W. Dunnett Spanton (*British Medical Journal*, Dec. 11, 1880), which consists in bringing the pillars together by means of a corkscrew wire mounted on a handle. A small puncture being made from above, the wire is placed in position, and forced down by a screw motion, the screw entering the pillars alternately. Mr. Spanton has operated on thirty-four cases with the screw and catgut suture, with no deaths. This proceeding differs little in principle from that practised by Dr. Grenville Dowell, who used a needle with a deep curve, and brought the pillars together by suture. Dr. Dowell reported in his book published in Philadelphia, 1876, ninety-six operations by nine different operators with a result of eighty cures and sixteen failures.

Accidents may follow Wood's operations as well as the others, such as sloughing, peritonitis and tetanus. On this last point Surgeon-Major French reported (*Indian Annals of Med. Sci.*, 1876) that two of his six cases were followed by tetanus. He thinks it likely that the climate may have been at fault. From

the statistics which I have had compiled from official reports on file in the Marine Hospital Bureau at Washington, it appears that in Calcutta for the year 1884 there were 1,137 deaths from tetanus, out of a total number of deaths from all causes of 12,823—nearly 9 per cent.; so there really seems to be more than a conjecture back of Surgeon-Major French's suggestion. The record by months is as follows:

TETANUS IN CALCUTTA, INDIA, 1884.

	Deaths from tetanus.	Total deaths from all causes.
January	64	919
February	61	964
March	114	1,516
April	105	1,709
May	98	1,332
June	71	797
July	85	7·9
August	101	785
September	102	816
October	112	869
November	115	1,260
December	89	1,127
Total for year	1,137	12,823

Percentage of deaths from tetanus to total deaths nearly 9 per cent.

"In Sweden an 'improved' operation for the radical cure of hernia has for some time past been practised by Drs. Svensson and Erdmann, surgeons to the Sabbatsberg Hospital at Stockholm. A ligature is applied to the neck of the hernia, and the sac is cut off below the ligature, the contents being previously examined by means of an incision into the sac and returned; or if only omental, excised, together with the sac. In congenital herniæ the upper part of the sac only is removed, and where the large bowel is included in the hernia and adherent to the sac wall, this, after being separated from the surrounding tissue, is returned together with the large intestine, and the rents of Poupart's ligament united by sutures.

"The dressing employed is iodoform and boracic acid, the wounds being washed with sublimate solutions. Since this has been substituted for carbolic gauze, abscesses, which used to occur frequently, have become rare. Of the forty-eight cases thus operated on, none of which were selected, thirty-eight were permanently cured; at least, no return of the hernia occurred within six months; and in the cases where a return did take place, which amounted to 20 per cent., the condition was very much less painful and distressing than it had been previous to the operation.

"Sabbatsberg Hospital has now been opened six years and a half, and during that time 300 cases of hernia have been admitted, about 200 of these being operated on with the knife, a milder procedure, consisting of alcoholic injections, being employed in most of the earlier cases.

"Not a single case proved fatal, though some of the herniæ were very large, some reaching within three or four inches of the knee." (*Med. and Surg. Rep.*, Philadelphia, 1886, ix, 115.)

In regard to the necessity for the recumbent position in the after-treatment of these cases, it should be the rule, and neglect of this rule seems to be the cause of failure in many cases of recurrence. Ravin, indeed, many years ago proposed position as the only rational means of cure, applying the principle that any cavity in the body, when unused, became filled up, or its walls agglutinated by a mild inflammatory or adhesive process.

Two other methods of treatment, each popular enough in their day, I will not stop long to discuss. I refer to the injection, and the seton through the canal. Velpeau, in "Noveau elements de Medicine operative, par A. L. M. Velpeau, Paris, 1839," stated that in the application of the fact that iodine exerted a wonderfully curative influence on serous membranes in general, as instanced in hydrocele, he had used injections of iodine for the radical cure of hernia in 1835. He again used it at the Charity Hospital in 1840, and this method being a great advance upon those then in vogue, became the favorite one in Paris. It was used in America by Pancoast of Philadelphia in 1836, who claims priority; by Dr. William Jayne at the Penitentiary in Illinois in 1840, and a few years later by Heaton, of Boston, who changed the fluid finally to the fluid extract of quercus alba, but for many years kept his remedy a secret, for which he was tried by the American Medical Association. After Velpeau all Paris began to use iodine injections, and new trocars and canulas figure in the reports and theses of the period. Nélaton, Ricord, Jobert, Maissoneuve and Follin invented "new" trocars. Some opened the sac with a bistoury, and others, as Jobert, plunged the trocar directly into the sac. The statistics were, as usual, at first highly favorable, but finally deaths from peritonitis began to be frequently noticed, and the operation became somewhat restricted in its application. Heaton's injection being milder in its operation, and injected into the pillars and aponeurotic fibres instead of the sac, still survives, having been, as one may say, rejuvenated, by the twisted and altogether wonderful syringe of Warren.

Dr. Luton, of Reims (*Bull. Gén. de Thérap.*, 1877), proposed the injection of 10 to 15 drops of salt water.

The introduction of the seton is probably due to Rattier in 1835, but, as may be gathered, most claims of priority, in the present state of literature, are somewhat problematical. Dr. J. W. Riggs, of New York, in 1858, revived the seton and invented a needle for that purpose, as did Dr. Armsby, also of New York. Dr. J. M. Carnochan (in *Am. Med. Gazette*, vol. ix, 1858), reports cases cured by the "Riggs method," and Dr. R. Thompson reported a "new" instrument, carrying the seton through the inguinal canal, to the Ohio Medical Society in 1859, but the seton, for some reason or another, has gone to join the iodine injection, and the acupuncture practice of Bonnet (1837). Various other methods of plugging the ring are recorded, the autoplasty of Jameson, of Baltimore, Langenbeck and Graefe, and finally the testicle itself. Dr. Chas. T. Hunter recorded a case where by the patient constantly pressing the testicle up into the ring it became fastened there, and the patient was cured. Dr. Hunter thought this a unique case, but Michel (*Am. Jour. Med. Sci.*, Oct., 1878) speaks of this as an old Spanish method. It was not

however peculiar to Spain, although Henry Monichon writing in the early part of the seventeenth century, calls it a Spanish method, for both Garengeot and Scultetus in condemning it mention it as a [illegible] surgical procedure.

Let us pass the operations of Mayor by ligatures fastened on sponges, and his triangular "cravat" bandage proposed in 1836; the punctures proposed by Anderson, of Baltimore, in 1835; the Cressom operation of 1838; the Belmas operation of gelatine strips in the canal; the modern revival of the suture revived by Czerney, to the last and most prevalent treatment, by continuous compression.

I have before spoken of the early invention of the truss, and you all know that there would not be space in this hall to exhibit the various modifications that have been invented. Hard pads, soft pads, air pads (Jarvis, 1838), springs and no springs, ratchets, catches and bending screws of infinite variety. Although radical cures of inguinal occur in mild cases, it is well known that trusses are in the main merely palliative; that permanent cures are rare, and closely confined to those of recent date with small openings, yet we go on ordering trusses for our patients just as if there were no way to increase the proportion of cures, and as if a truss could not as well be worn after an operation, if need be, as before it, and as if no recent advances in abdominal surgery had been made. As no logical reason can be given for a failure to accept the view that there has been an advance, I perhaps need not say that *I favor in all cases affording even a reasonable prospect of cure*, an operation therefor, and that *all cases whatsoever of hernia should be operated upon.*

Spontaneous cures of hernia, while uncommon, occasionally happen, and there are several cases on record. The most recent case is that by Dr. Streeter, of Glen's Falls, N. Y., where in consequence of suppuration in the inguinal canal following a bubo, the canal was closed, and the hernia cured. The patient had previously worn a truss for a year, without avail. But a surgeon would be hardly likely as a general practice to recommend his patients to acquire a bubo.

I conclude by quoting the remark of Sir Spencer Wells made many years ago:

"But the surgeon who cures hernia radically with certainty and safety, is a greater public benefactor than he who saves the life of his patient in strangulated hernia, as he not only relieves a larger number of human creatures from the suffering and inconvenience of wearing a truss, but he averts the danger of strangulation to which they are continually exposed in a greater or less degree through every period of life."

THE [illegible]ORM AND PRACTICAL VALUE OF THE SHADOW TEST IN THE MEASUREMENT OF REFRACTION.

[illegible] EDWARD JACKSON, A.M., M.D.,

[illegible] EYE CLINIC IN THE PHILADELPHIA POLYCLINIC.

The purpose of my paper is to draw attention to the practical value of the shadow test, or retinoscopy; and to insist on the importance, for its successful and satisfactory employment, of certain conditions which have not received due attention at the hands of other writers upon the subject. In this country most ophthalmologists are not familiar with the test. See Dr. Loring's curt dismissal of it as of no practical importance; while of recent English writers Swanzy gives it eight pages of the seventy-three devoted to the whole subject of physiological optics and ametropia, Juler assigns to it ten, out of seventy given to errors of refraction, Hartridge one-eighth, and Morton one-sixth of the whole of their respective books on refraction.

I can readily understand how an acquaintance with it, based on some of the printed descriptions and a few unsuccessful attempts to apply it, would lead one to think lightly of its value. But no one who has mastered it, has felt, or, I think, will feel inclined to leave it unused; no matter what other methods he may have for the estimation of ametropia.

The principle of the test is simple. From each point of the illuminated retina rays of light pass through the dioptric media into the air. If by the proportions of these media, or a convex lens in front of them, these rays are rendered convergent, they meet in a real focus in front of the eye. If we determine the distance from this focus to the eye we determine the state of refraction in the eye, with or without a convex lens of known strength before it. At this focus the rays cross. Their relations become reversed. When an observer receives in his own eye these emergent retinal rays, if he receive them before they cross, he sees an erect image of the retina; if he receive them after they cross he sees an inverted image of the retina. Placing the eye alternately within and beyond the point at which they are focussed he sees first an erect, then an inverted image. The reversal of the image occurs at the conjugate focus of the retina. I have therefore called this *the point of reversal.*

As the point of reversal is approached from either side, the image of the retina becomes enormously magnified and very indistinct, and just at the point the pupil becomes occupied by a perfectly uniform feeble glare of light. Even some distance from this point the details of the fundus are quite difficult to see. An inspection of these details is not, therefore, a satisfactory method of determining the position of the point of reversal. The best object by which to determine if the retina is seen in the erect or an inverted image is a small area of light moved across it; obtained by throwing into the eye with a mirror the light from some lamp. By turning the mirror the light area is made to move across the retina in any desired direction, and the direction of its motion is readily known, for some of the light falls on the face, forming a light area there, and the areas on the retina and the face always move in the same direction. Now, watching through the pupil the apparent movement of the retinal light area, we can note when this is with the real movement, the retina being seen in the erect image, and when it is the opposite of the real movement, the retina being seen in the inverted image. And this direction of the movement can,

under proper conditions, be recognized close enough to the point of reversal to determine the position of that point with great accuracy.

Now there are two ways of fixing the position of the point of reversal. Either, as above indicated, the observer may move his eye first within, then beyond it, while the point itself remains fixed; or he may keep his eye fixed and move the point of reversal by placing in front of the patient's eye weaker and stronger glasses alternately until he knows just what glass will bring it to a certain position. The latter method has been followed by Cuignet[1] and the mass of those who have practised or written upon retinoscopy. The former was proposed by Chibret[2] for the determination of myopia; and by myself[3] for the determination of ametropia of all forms. It is the better way, because it is easier to vary the observer's distance than to make all the necessary changes of glasses, especially where, as in most cases, it is only desired to approximate the error of refraction to get a basis for subjective testing.

The variation of the distance between the observer and patient requires the use of the plane mirror. The plane mirror can be used for the other form, as described by Story.[4] But while the plane mirror answers for either, the concave mirror is only serviceable when the position of the observer is fixed, and that of the point of reversal varied. This is because the retinal light area must have a certain brilliancy and minuteness, for its motion to be readily watched. And with the concave mirror, if the observer approach the patient the retinal light area gets too large; if he withdraw from the patient it gets too dim. There is just one point at which the size and brilliancy of the light area are the same with the concave as with the plane mirror; its distance from the patient's eye is found by this proportion: $a—2d : 2a :: d : b$, in which a is the distance from the source of light to the mirror, d the focal length of the mirror, and b the desired distance from the mirror to the patient's face. Applying this formula, it is found that the greatest distance at which the concave mirror can advantageously be used without a specially brilliant light is but little over four times the focal distance of the mirror; if the light be placed back of the patient's head. For the ordinary concave mirror of 22 centimetres focal length, the proper distance is a little less than one metre. As I have pointed out in the paper above referred to, for accuracy it is best to make the final estimate of refraction with such a glass before the patient's eye as will bring the point of reversal over one and usually less than two metres from the eye. Morton and Barrett[5] have, apparently without knowledge of my paper, come to the same conclusion. But as they were working with the concave mirror, the common forms were found of too short focus. So they propose a special concave mirror with a focal length of thirty-six centimetres for accurate retinoscopy. Such a mirror could of course be used.

The need of a special form of mirror of course destroys the one advantage that retinoscopy with the concave mirror was supposed to have, namely: that we could practice it with the mirror of the ophthalmoscope already in our pockets. But for most American ophthalmologists that supposed advantage was most illusory. With us the segmental ring mirror of Dr. Loring is commonly used, and for good reasons. But it is entirely unsuited to retinoscopy because it is too narrow. With it the light area is apt to pass entirely off the eye before the retinal area has moved sufficiently to indicate the direction of its apparent motion. I believe it is on account of the unsuitableness of the mirror used more than from anything else that the profession in this country has failed to avail itself of the shadow test. English and French ophthalmoscopes are almost invariably fitted with a round mirror over an inch in diameter; and even these are being discarded for larger mirrors specially adapted to the purpose. The form of mirror I use, and recommend, is that described in the current volume of the *Medical News*.[6] It is one and one-half inches in diameter, being quite as small as will, under all ordinary circumstances, prove satisfactory.

One other point as to the best method. The source of light should be small and brilliant. I have elsewhere given reasons for this; small, to get the characteristic appearances of astigmatism which become pronounced in so far as the retinal light area approaches the condition of a single bright point; brilliant, to make the margin of the area and its movements more readily discernable. The best source is unquestionably the arc electric light; but it is not generally available, and any bright lamp flame will answer. In my office I commonly use an argand gas burner, which is covered by a metal chimney with an aperture one inch in diameter opposite the brightest part of the flame. Placing the patient a couple of yards away from the light, I have a source of light small enough and bright enough to answer the purpose. As improving by contrast the brightness of the source of light, the room should be thoroughly darkened for the application of the shadow test.

The practical value of a diagnostic procedure might be considered with reference to its capacity to reveal that which could be discovered in no other way, with reference to its certainty, its accuracy, and the readiness with which it is put in practice. For the mass of cases undoubtedly we have other ways of determining the refraction. But in a few cases retinoscopy is the only satisfactory and reliable way of doing this. For instance, where the patient cannot be relied on for subjective tests; and the eyes cannot be well fixed for the estimation of the refraction by the erect method, as when there is nystagmus. In several cases of nystagmus the shadow test has shown me the presence and exact amount of considerable degrees of astigmatism, unsuspected after ex-

[1] Cuignet. Keratoscopie Rec. d. Ophthal., 1873.

[2] Chibret Detirmination Quantative, de la Myopie par la Keratoscopie(Fantoscopie Retinienne a l'Aaide d'un Simple Miroir Plan. Ann. d'Oculist, 1882, p. 228.

[3] Jackson. Measurement of Refraction by the Shadow Test, or Retinoscopy. Am. Journal Med. Sciences, April, 1885.

[4] Story. Advantages of the Plane Ophthalmoscopic Mirror in Retinoscopy. Oph. Review, 1883, p. 228.

[5] Morton and Barrett. Clinical Investigations on Methods of Retinoscopy. Brit. Med. Journ., 1886, I., p. 105.

[6] Jackson. A Form of Plane Mirror for the Shadow Test. Medical News, 1886. I, p. 674.

aminations with the "refraction ophthalmoscope" and considerable testing with test-lenses. The case which first powerfully impressed me with the value of the test was one of a restless, wilful, spoiled girl of eleven. Where with the ophthalmoscope I could detect the presence of considerable hypermetropic astigmatism, but neither with this or the test-lenses could fix even approximately its amount or axis, her answers for subjective tests were utterly unsatisfactory and unreliable. Finally, in despair, I turned to the shadow-test which I had been studying and using in a rather tentative manner. With it I worked out the refraction and placed the lenses, R.—0.5 = +2. cy.ax.110°. L.+2.cy.ax.70°; bringing her vision for either eye from $\frac{1}{L^5}$, the best I had before been able to obtain, to $\frac{15}{XV}$ partly. The surprise occasioned by the improvement in vision disarmed her of wilfulness, for the time, and I was able to get full subjective confirmation of the accuracy of the correction. Now, such is my confidence in the certainty of the method, that I would not hesitate in such a case to order the glass though the patient said it made the sight worse instead of better. For certainty an objective method, I think we all agree, is infinitely superior to any subjective test.

For accuracy, retinoscopy is considerably superior to the direct evamination with the ophthalmoscope. In hypermetropia, myopia and regular astigmatism, I think the limits of error may be placed as within a half dioptric. To discover irregular astigmatism and its character and extent, it is far superior to any other method of examination, as most of you doubtless know by experience; for it was applied for this purpose by Bowman and Donders long before Cuignet's description of "keratoscopy" was written. Loring says: "The determination of astigmatism by means of the ophthalmoscope has always been considered one of the most difficult and, from its want of accuracy, one of the least satisfactory applications of the instrument, and there is no doubt that this is to a great extent true." Here is the special field of retinoscopy. While Loring says of his method: "0.75D can be detected by this test, provided the accommodation in both the observed and observing eye is perfectly relaxed," it may be said of retinoscopy that under similar conditions of the observed eye, it will measure 0.25D of astigmatism, while the observer's eye may be entirely unskilled in the art of relaxing the accommodation; and with full power of accommodation in the observed eye 0.5D of astigmatism is readily detected.

The description of the method indicates the readiness with which it may be practiced. In simplicity of apparatus it stands alone. And I need scarcely tell you that in the fixing of astigmatism it saves time as well as gives certainty.

Let me close with this caution: the possibilities of practical value in the shadow test only appear when the details I have mentioned are carefully attended to. It is not to be acquired by the reading of a description, and a few desultory trials, nor will a single successful determination insure that all others will be equally certain and exact. In this, as in anything else, accuracy is only attainable by care and skill.

A CASE OF ULCERATIVE ENDOCARDITIS.[1]

BY GRACE WOLCOTT, M.D.,

OF BOSTON.

On the 17th of October, 1884, I was called to see Mrs. R. M., 40 years of age. She had been a tailoress until her marriage, six years before. She told me that three years previous to this visit she had rheumatism, for which she was treated about one year. She fancied that the remedies given her then, increased the menstrual flow very much at first, and finally arrested it altogether. This so alarmed her that she refused to take any more medicine, and had had no further treatment up to the time that I saw her, although she had suffered greatly with her heart in the meantime. She was a slender woman, rather over medium height. Her face was very pale, her lips bluish, cheeks sunken. She seemed very nervous and her voice was tremulous.

Her pulse was 108, very irregular in volume and rhythm, and frequently intermitted. The radial pulse was so weak that I could not count it accurately, and from this time I was obliged to take the pulse over the heart's apex. Temperature and respiration were normal. The bowels were constipated. The tongue was furred and the breath foul. She complained of gaseous dyspepsia, and of pain over the apex, accompanied by dyspnœa and palpitation, after any physical exertion or mental excitement.

Physical examination showed the apex beat to be in the fifth interspace, three and one-half inches from mid-sternum, and the area of cardiac dulness to be somewhat increased. At this examination the heart's pulsations were so weak and irregular that no diagnosis of the valvular condition was made.

The treatment was directed to the heart itself and the sluggish condition of the bowels, as I thought the dyspepsia was secondary. The bowels were unloaded by a simple laxative, and under the influence of the tincture of digitalis the number of pulsations was reduced from 108 to 80 per minute, the beat becoming stronger and more regular. Auscultation then revealed a double mitral and a double aortic murmur. The dose of digitalis was then reduced from gtt. x to gtt. iii, three times daily, and she was given a pill of cinchona, iron and gentian, and under this treatment she gradually improved. Two weeks from my first visit her pulse was 74 per minute and regular, the bowels moved daily and she was able to go up and down stairs and to take long walks without discomfort.

She continued in this condition until November 26, when after severe nervous excitement, she came to my office suffering from palpitation, dyspnœa and dyspepsia, with a pulse which varied from 116 to 128 beats per minute. Digitalis was again administered and soon all trouble subsided.

On January 12, 1885, I was again called to see her. She had taken a severe cold and had rheumatic pains with constipation, headache, anorexia and vomiting. The pulse was 120, the apex beat very feeble. Her face was extremely pale. She was put to bed

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 12, 1886.

and the tincture of digitalis was again given in gtt. x doses, and treatment suitable to her febrile condition was instituted.

January 13. The pulse rate was reduced to 72 per minute, but she suffered greatly from nausea, and passed a sleepless night.

January 14. She complained of severe pain over the præcordia. Urine scanty; specific gravity 10.20; one-fifth albumen by bulk and loaded with urates. A flaxseed poultice was placed over the region of the heart and potass. bitart was administered in small doses every two hours. Sulphate of quinine was given thrice daily and sulphate of morphia at bedtime.

January 15, A.M. The temperature was 101.8°, pulse 76 and respirations 36. The pain over the præcordia was very much lessened but the patient complained of severe pain in the right and left lumbar regions. At this time coarse moist râles were present in both lungs, accompanied by a cough with profuse expectoration of mucus.

January 16. She was rather better and from that date she gained slowly, the convalescence being interrupted only on January 22 and 23, when she had chills followed by sweating. No unfavorable symptoms followed, however, and she was soon able to sit up and her appetite returned. She was given a pill of quinine, arsenious acid and gentian, and the digitalis was continued. She expressed herself repeatedly as feeling better than she had felt for more than two years. She was able to go over the stairs and to walk down town and back. I tried to impress upon her many times the necessity for continuing the digitalis, but she felt so well that she did not see the need of it, and soon after I stopped my visits she stopped all medication.

She had similar attacks on March 7, 15 and 30. The pulse on each of these occasions was 140 but was quickly reduced by digitalis or caffeine. The period from April 4 to April 19 was one of great comfort. She was able to walk long distances every fine day, and to do her housework with perfect ease. At this time I considered all her discomfort to be due to the fact that the limit of compensatory hypertrophy had been reached and dilatation had begun, the crippled condition of the aortic and mitral valves having probably originated in the attack of rheumatism three years before.

With the exception of a slight pericarditis in January the patient had with each attack, bronchorrhœa, dyspnœa and various gastro-intestinal disturbances, all of which disappeared as soon as the heart's action was fully under control, and invariably reappeared about one week after she stopped medication. Repeated microscopic examination of the urine revealed nothing abnormal.

On the morning of April 20, I was called to see Mrs. M., and was told that the previous evening just after going to bed, she had a violent chill, that the chill was followed by profuse sweating, severe pain in the right lumbar region, and that she had passed a restless and sleepless night. At this time, about 8 o'clock A.M., the temperature was 101°, pulse 140 and irregular, respiration 40. Her face was very haggard and anxious. Orthopnœa was marked and there was a copious expectoration of glairy mucus. The prostration was so extreme that the physical examination was necessarily hurried and superficial, but I found on percussion that there was flatness over the lower part of the right chest and on auscultation mucus and subcrepitant râles over both lungs. Her stomach was very irritable and it was with difficulty that she retained any food. She was given one of the ammonia salts together with quinine and morphia.

April 21, there was an improvement and her temperature had reached 103°. I then asked Dr. A. N. Blodgett to see her with me in consultation. A careful examination revealed a slight effusion in the right pleural cavity, œdema of both lungs, and pericarditis friction sounds being present. The possibility of the existence of ulcerative endocarditis was suggested by Dr. Blodgett. No change in treatment was advised, except with regard to stimulants and milk. These had been tried repeatedly, in various forms, but unsuccessfully; however, we renewed our efforts, but to no purpose.

During the 22d and 23d, she remained in about the same condition except that she grew gradually weaker. On the night of the 23d, she went into a comatose state which lasted until 9 P.M., of April 24, when she died.

During the illness, which lasted five days, the temperature ranged from 101.5° to 103° there being marked morning remissions and evening exacerbations. The pulse was 140 throughout the attack and the respirations 40 to 48 per minute. Orthopnœa was present from the first, but she complained of no discomfort or pain about the heart at any time. The profuse expectoration was very annoying to her as she could only raise it with great difficulty on account of the prostration. The skin was cold and clammy to the feel, and sallow, almost cadaveric in appearance. Permission to make an autopsy was given at so late an hour, and the time allowed for it so limited, that great haste was required. For this reason the chest only was opened.

Autopsy. Made twelve hours after death. Body fairly well nourished. Rigor mortis present. The lower half of right lung firmly bound to costal pleura by old adhesions; a few recent adhesions were found. The left lung was entirely free. The right pleural cavity contained about a pint of fluid. The left chest was normal. Slight hypostatic congestion over posterior part of lower lobes of both lungs, and both were œdematous.

The pericardial sac contained about ℥iij of fluid. The heart was increased fully one quarter in size. its walls were hypertrophied and its cavities considerably dilated. On the outer surface of the heart, along the course of the left coronary artery were evidence of inflammation in the shape of little bead-like deposits which were quite firm. Near the apex on the outer surface of the left ventricle was a patch of inflammatory exudation about the size of a small lima bean, which was quite soft. There were several similar patches, though much smaller, at different points of the visceral pericardium, also some cloudiness.

In both articles and in both ventricles were large

ante-mortem clots, the clot in the left ventricle extending into the aorta. The endocardium of the left ventricle showed evidences of recent inflammatory action in the shape of cloudy patches and delicate shreds of plastic matter.

The leaflets of the mitral valve showed fibroid induration, the orifice admitting but two fingers. The ventricular surface of the cusps of the aortic valve were the seat of the ulcerative process. In opening the aortic orifice, the incision was made at the junction of the right and left leaflets next the pulmonary artery, dividing one ulcer, the largest one, which measured three-eighths of an inch by one-fourth. It was of a dirty grayish color, and beneath was disintegrated tissue.

The second ulcer was at the junction of the posterior and right cusps.

A little to the left of the middle of the right cusp was a firm mass about the size and shape of a small pea, with beginning ulceration at its apex.

On the posterior cusp were two similar nodules, one of which was slightly softened at the apex, and the other firm.

There were also evidences of inflammation of the aorta extending about an inch and a half from the aortic orifice.

I am glad to lay before the Section the report of this case, with the specimen, for the criticism of its members. It seems to me that the specimen presents *well*, a gradation of the process from the indurated nodule to the open ulcer.

MEDICAL PROGRESS.

BOILED AND UNBOILED MILK.—The inability, or the disinclination, of the modern woman to supply to her young its natural pabulum, is the most fruitful cause of the high per centage of mortality in infants under two years of age. The ingenuity of man has united with his knowledge of physiology and chemistry to supply a substitute for the natural secretion, and we have in the market a large variety of artificial foods for infants. While some of these are tolerably successful, few, if any, are equal to the milk of the cow, which, with slight modification, and with proper care in its preservation, may be made to quite closely conform to human milk. In spite, however, of the most scrupulous care, raw milk is frequently found to be illy borne. Recent experiments by DR. REICHMANN *(Deutsche Med. Zeitung)* seem to show that by boiling the milk these difficulties may be obviated. The following are the formulated results of these experiments:

1. Boiled milk leaves the healthy stomach more rapidly than an equal quantity of unboiled milk.

2. The digestion of boiled milk is more rapidly accomplished than that of unboiled milk.

3. The coagulation of unboiled milk in the stomach is complete in five minutes.

4. The coagulation is not caused by the acid of the gastric juice, but by the influence of a special ferment (milk-curdling ferment).

5. The acidity of the gastric juice is at first due almost solely to lactic acid, and, later in the process of digestion, to the presence of hydrochloric acid.

6. Hydrochloric acid first appears in perceptible amount forty-five minutes after the ingestion of half a pint of milk.

7. For the first hour and a quarter after the ingestion of milk the acidity gradually increases and then decreases until the milk has entirely left the stomach.

8. The curds of casein, in digestion of boiled milk, are much softer than in the case of uncooked milk.—*Medical Age*, August 10, 1886.

CONNECTION BETWEEN SPLENIC TUMOR AND THE UTERINE FUNCTIONS.—DR. SKORCZEWSKI describes in the *Przeglad Lekarski*, a Polish medical journal, a peculiar case of splenic tumor which had a distinct relation to the generative organs. A woman aged 26, after a difficult labor four years ago, experienced pain in the left hypochondrium, and in the course of a few days noticed a tumor in the abdomen, which rapidly attained to the size it was when first seen by Dr. Skorczewski. It then occupied nearly the whole abdomen, being of an ovoid form, the long axis being transverse. It was hard, with smooth thick edges, and could be displaced upwards to the extent of a hand's-breadth above the symphysis pubis. The urine was normal; also the number of blood-corpuscles. Quinine and arsenic produced no effect. Electricity was then tried, and after a course of the interrupted followed by another of the constant current, occupying together some three weeks, the tumor had diminished so much that when pushed up under the left ribs it only extended about a hand's-breadth below them, The patient's general condition, too, had become decidedly better. Menstruation, lasting four days, then occurred, and simultaneously the tumor again increased to its original dimensions, and the woman's general condition became worse. Neither electricity nor other metnods of treatment which were tried produced any fresh diminution in the tumor or any improvement in the general condition. The connection between the splenic tumor and the functions of the generative organs were evident enough, but no explanation of this connection seems to have suggested itself to the author.—*Lancet*, May 15, 1886.

ANACHARIS ALSINASTRUM.—DR. BRANDES has recently declared the valuable properties of the anacharis alsinastrum, a water-plant which has hitherto been considered as a nuisance. He says that in the district where he lives, and where malaria and diarrhœa yearly appeared in a sporadic or epidemic form, those diseases have gradually decreased since the anacharis alsinastrum began to infest the neighboring rivers and marshes, and for four years have totally disappeared. He proposes that the plant, which came originally from Canada, should be planted in marshy districts, with the view of checking malaria; and the experiment, in view of the evidence adduced in the article under notice, is certainly deserving of consideration.—*Medical News*, August 28, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, SEPTEMBER 4, 1886.

"THE HIGHER EDUCATION OF WOMEN."

Is it for the good of the human race, considered as progressive, that women should be trained and admitted to compete with men in the ways and walks of life from which, heretofore (as unsuited to their sex), they have been excluded by feeling and usage, and largely, indeed, by actual legislation? Such is the question discussed by Dr. Withers Moore in his Presidential Address before the fifty-fourth annual meeting of the British Medical Association. The Address was timely, and the subject one which it was proper that the President of a great Association should discuss; for if the proper answer to the question be the negative, and negative for reasons of public health, it was proper that the dangers should be pointed out by a medical man. Is it for the public good that we should have female doctors, lawyers, divines, professors, Ministers of State, astronomers, mathematicians, generals? Were women intended for work of this kind by nature? Is such work of special detriment to them as well as to the public good?

"The first requisite to success in life," says Mr. Herbert Spencer, "is to be a good animal; and to be a nation of good animals is the first condition to national prosperity." To be a race of good animals is also, as Dr. Moore points out, the first essential of human well-being. To be a good animal means a great deal. We often hear it said that we do not so much want a very robust health as great intellectual attainment and intellectual strength; that it is the mind, the brain of a nation which makes it; and that in the struggle of life the body must take its chance, but come what may the mind must be pushed to the utmost. It would of course be a waste of time to argue such a question before intelligent and thinking medical men. The question which Dr. Moore has asked and discussed is one that has a peculiar interest for the American. We are a people in a hurry, and we take but too little interest in what our neighbor is doing so he does not interfere with us. Many of our aims and ends are attained at an expense of nerve and muscle force which is unknown to other nations. But that is not because we are deficient in brain-force; it is because we do not pay sufficient attention to the proper development of the body that must sustain the brain. Our breed of men must be bettered, and the first requisite to this end is to have the breed of women bettered; good male animals cannot be reared without good female animals. Law and custom have, from time immemorial, imposed certain restraints upon women; are we thoughtlessly to throw aside these restraints and place women in competition with men? When we ask the question, Is the preliminary training for such competitive work, and the subsequent practice of it in the struggle for existence, of such a nature that it will more or less indispose and incapacitate women for their proper sphere, their proper function, of being mothers of men? we must look for the answer from those who can give a practical answer—no theoretical or sentimental people can give a correct answer.

One of the best answers to these questions may be found in the first chapter of Emmet's work on "Gynæcology," pages 17 to 25. It is a chapter which should be reprinted and placed in every family and school in the land. One effect of this higher education of women, of which we hear and read so much, will be to hinder those who should be good mothers of men from being mothers at all. Good, the best, women cannot take the place of good men; they may do some of the work that would have been done by the sons, but they cannot do *the* work that the sons would have done under any system of training. A good professional education is very expensive; the expenditure is not alone one of money, but there is an enormous outlay of physiological force; much more than a woman can afford, if she is to perform her proper functions as a producer of men. Clearly that is the function of woman, for she is the only means by which man can be brought into the world. The production of children calls for far more physiological force on the part of the mother than of the father. The functions of gestation and maternity require a great outlay of physiological force, and if this force is used up in other work the offspring of the world must suffer, as must the woman herself.

We have, then, two channels of expenditure of physiological force of the woman: the terrible strain of higher and professional education, the training for competition with men in the most severe exercises of the intellect, and the expense of being properly trained for motherhood. It is of the greatest importance to a man, to his country, that he should have had a good, an able mother, a strong mother; a healthy, strong animal, as well as an intellectually strong human being. More than being mothers of men, women are the mothers of mothers of men, of the material of which men are made. "Material," says Dr. Moore; "why the word itself is but the Latin of mothering, a lengthened out form of *mater*. We have no corresponding *paterial*." Not only is woman the producer of this man-material, but she has charge of its shaping and moulding during the most plastic period of its existence. But "instead of nine or ten years forward, from his beginning on the day on which he was born, go nine months backwards, to the true beginning and starting-point of him, when, by growth and development, he had to be built up and prepared for being born. The whole ante natal structure, with all its complexities, is merely and exclusively made out of the mother's living substance; it has been subjected to influences and impressions exclusively maternal; it is mother-stuff throughout. And this goes on thus all the time during which it is developing into readiness to become the new-born babe—the man that is to be. Blood and bone, nerve and muscle, are all made out of mother-stuff. Can we exaggerate the importance to the future man of the quality of the mother-stuff?" And is it not equally important to the future woman, the future mother?

"Educate a woman, and you educate a race." This saying is full of promise if it be rightly interpreted; full of dire disaster if it be applied to the mind to the exclusion of the body. While it may be true that too much bodily labor may render women less prolific it is very much more clearly shown that excessive mental labor is a cause of sterility (or infertility). "In its full sense," says Herbert Spencer, the reproductive power means the power to bear a well-developed infant, and to supply that infant with the natural food for the natural period. Most of the flat-chested girls who survive their high-pressure education are unable to do this. Were their fertility measured by the number of children they could rear without artificial aid, they would prove unable to do this." It would be a curious and a not uninstructive task to take a census of the nursing bottles used in the various civilized countries. It would be a tolerably accurate index of the animal-power of the women in those countries. It is extremely probable that twice as many are in use in America as in any two or three countries of Europe; and when we come to compare this country with China, for example, it is safe to say that we destroy more nursing bottles each year than have been used in China since the instrument was thought of. Our education, our civilization, is one that stunts, deforms and enfeebles women; and as such it must be unsound. Shall we make it worse by placing women in competition with man, by still further stunting, deforming and enfeebling her animal powers? The goal to which we are going is to have the weaker and inferior woman perpetuate the race; the very ones who, if any, should be prohibited from producing men and mothers of men. If it were at all necessary in the interests of human progress, if it were likely that the world and mankind would be the better for it, there would be an excuse for a thorough and honest trial of it; but there is neither necessity nor justification. And this is more applicable just in proportion as the women under consideration have had unfavorable antecedents as to food, rearing, and general surroundings. At best they are scarcely fit for reproduction until the animal has been more fully developed; this not done, and the immaterial animal is developed to the disadvantage of animal powers, and they are fit for nothing. Instead of development there is degeneration and impaired nutrition, and evolution gives way to nervous and bodily dissolution.

Whatever does, or tends to, render women infertile is prejudicial to a nation. The sterility of its women caused the downfall of the Roman Empire, or was one of the principal causes; among modern peoples the French are giving the world an example of decadence which is largly due to infertility of its women. Every woman cannot be a mother, or a wife; no more can every child grow to adolescence. But it is not assuming too much to say that woman was born to marry and bear children. In England, for example, there is an excess of marriageable men. This is to be attributed to England's standing army; the husbands of those unmarried woman may be found scattered and buried all over the earth. To say that if every woman was a wife it would involve many unions worse than solitude is entirely outside of the question which we are discussing; that people will contract foolish marriages is no argument against the principle of marriage. We cannot agree with our contemporary, the *British Medical Journal*, in its Hibernianism that "if every English woman were employed as a wife, there would still be a consider-

able surplus who would have to employ themselves." There are some women who must work, and if they cannot find woman's work to do then they must work as best they can, even if as men. But there is now a tendency to turn a woman into a man as a sort of experiment or *fad;* a young girl, unthinkingly perhaps, takes it into her head that she must do man's work, though there is no necessity for it, and when she has not the constitution to do a woman's proper work. Parents, teachers, and the family doctor should endeavor to repress this growing tendency. If our girls were more properly taught at school, if they were taught the true physiology of woman, of life itself, this tendency would be in a great measure stopped. We cannot turn man into a woman, nor fit him to perform a woman's duties; no more can we fit woman to perform the work and duties of a man.

THE REMOTE EFFECTS OF REMEDIES.

The Addresses in the Sections of the British Medical Association this year were of an unusually brilliant character, and without invidious comparison it may be said that none were more interesting than that in the "Section of Medicine," on "The Remote Effects of Remedies," by Dr. W. H. Broadbent. As it is necessary to have in view in the treatment of disease the remote effects of the disease, so we should look beyond the immediate effects of the treatment, of the remedies used, to the remote effects. If we give morphine or bromides to-day what will be the effect to-morrow or the next day? If we use them all this week what will be the effect next week or next month? Will not the remote effects be different on different persons, and wherein will they differ? We may use alcohol, for example, with safety as regards future effects in one case, but in another these effects will far outweigh the possible benefits. We may administer chloral for the purpose of inducing sleep, but should the patient depend on the drug instead of taking the proper exercise, and get a proper amount of fresh air, the remote effects of the drug will be as bad or worse than a temporary insomnia. Equally bad are the remote effects of cocaine when a person of weak will once finds that its use will bring activity, exhilaration, and excitement. It may be said that the injurious effects which follow the continued use of a drug are the result of the patients taking the remedies into their own hands, of abuse rather than use; and this whether the patient has at first undertaken to treat his own case, or whether the drug has been first prescribed by a physician, or its use sanctioned by him. Of course there are some cases in which the remote effects cannot be clearly seen; but it is well to be on our guard.

In treating a case of gout, for example, we can cut short the attack by the free administration of colchicum, veratria and other drugs of similar action. The injudicious use of the drugs may cause immediate prostration, and the remote effects may be very disastrous. But the violent pain of acute gout warrants us in using colchicum, but on the condition that proper precautions are used to prevent the remote effects; we institute an after-treatment with aperients, alkalies, iodides, and careful regulation of the diet. The after-treatment, especially the strict diet, is unpleasant to the gouty patient, and is frequently disregarded. It is difficult to make him see that the after-treatment will do what the attack of gout would have done—clear the system of the gouty poison, and bring the secretory and excretory organs into a state of functional activity. On the assumption that gout is due to the formation of uric acid in the system, it is not supposed that the use of colchicum will arrest this formation, it only checks antecedent metabolism, and then nitrogenous waste rather than urea and uric acid accumulates in the system. They provoke resistance in the arterial tree, and then comes increased arterial tension, with all its dangerous consequences. All the consequences of increased arterial tension—vascular and cardiac troubles, arterial degeneration, cerebral hæmorrhage, aneurism, cardiac dilatation, and valvular disease—may be prematurely induced by means taken to keep down or prevent an attack of gout. This is very readily seen in workers in lead, which, as we know, is a common cause of gout when accumulated in the system. Painters and plumbers take all kinds of gout specifics, the attacks are suppressed or prevented, the system becomes charged with imperfectly oxidized matter, and we see as a result deposits of urate of soda in the small joints, the arteries injured by degenerative changes, due to high pressure; or the heart may be dilated by resistance in the peripheral circulation; granular disease of the kidneys comes on, as a result of the state of the blood, or of the vascular tension to which the state of the blood has given rise; the renal lesion often aggravating the bad state of the blood. In this state the system is easily overcome by diseases which under other circumstances it would safely weather. The "Banting" system of treating obesity may also cause high arterial tension. The highly nitrogenized diet, the exclusion of non-nitrogenous substances, and the limitation of the amount of fluid taken, gives a disproportionate amount of nitrogenized matter in the

system, while there is not the amount of water necessary for active metabolism and elimination. A part of the system is a large amount of exercise, and it is a very necessary part, but it is the very part which is most frequently neglected.

In some of these cases it is the patient himself who is wholly responsible for the consequences, interfering ignorantly with natural processes, but medical men are sometimes responsible for very similar errors. Dr. Broadbent thinks that "a similar error, for which medical teaching is directly responsible, is committed when strict dietetic treatment is insisted upon in the glycosuria of stout elderly gouty subjects. I will not stop to discuss the question whether this is to be called diabetes or not; but to be quite clear, I may state that the cases I have in mind are not those in which there is merely, from time to time, a small amount of sugar in the urine, but such as have copious urine with high specific gravity, and the constant presence of much sugar, often with thirst. Now, in some of these patients the establishment of habitual and free elimination of sugar is coincident with the disappearance of many distressing symptoms, especially digestive troubles, loss of appetite, irritability of temper, disturbed sleep, and morning depression. "The altered chemistry of the liver is, in some way, a relief; perhaps it is by the increased elimination of the urea which accompanies the sugar, the two coming from the splitting up of nitrogenized matters. I do not wish to argue from this, that we must let the glycosuria alone, but only that we mnst bear it in mind in our treatment. Now, in my experience, this form of glycosuria is almost always associated with high tension in the pulse, which is not constantly the case in the diabetes of early life, the pressure in the arteries here being often extremely low; as everyone knows also, it is common in gouty persons, and it may or may not appear to relieve the gout; very often it does nothing of the kind. It appears to me that, with all these evidences of the presence of nitrogenized waste in the blood, it can scarcely be right to insist on a diet from which non-nitrogenized matters are strictly excluded. It may be added that, as a matter of practical observation, such a diet is rarely, if ever, adhered to; patients belonging to this class are not usually such as have been accustomed to self-restraint, or such as can resist the solicitations of a newly reviving appetite; and, when it is attempted, do we not find the mouth to become foul and dry, the appetite fail, the bowels deranged, till we are compelled to relax the restrictions?" In some of these cases the heart suffers, or has already sustained some injury, and the long full pulse of sustained tension has given way to the short sudden wave in a large full artery—a sign of dilatation which examination of the heart will confirm. These are the cases which are so much benefited by the eliminant action of large quantities of water, particularly when certain saline matters are found in the water. There is direct proof that elimination is the therapeutic indication. The health of the patient is what we are after in these cases, more than the removal of all the sugar from the urine. Under an eliminant treatment the patients feel and are better, with a modified mixed diet, than on what is called a strict diabetic diet. And more than this, under the eliminating action of a blue and colocynth pill, once or twice a week, followed by salicylates and alkalies, the sugar often disappears from the urine for months and years.

The continued use of the solanaceous drugs for asthma, especially in cases of catarrhal asthma, and of certain "asthma cures," while at first bringing relief to the suffocating patient, will in time produce such effects on the vascular and nervous systems, stupified mental condition, congested face and eyes, the large sluggish pulse of arterial paralysis, dilatation of the right heart, that they must be discontinued or they themselves will kill the patient. Probably no one affection is so persistently maltreated as sick-headache; and almost on a par with this may be placed the so-called indigestion. There are very many cases of each, or both combined, which call for eliminant and tonic treatment, but which do not get it. In indigestion it is often the case that the stomach must be immediately built up to the food, instead of putting the food down to the low level of the stomach. In the first it is often imperative to build up the blood and nervous system, the heart itself, so as to keep up a state of constant elimination of effete matter. "It is quite true that most people eat far too much, and, again, that with regard to the stomach, as well as to all other organs and parts of the body, the principal of functional rest is of primary importance in dealing with disease; and restriction of food, and even temporary starvation is often necessary; but we must distinguish, and not starve, those who are suffering from inadequate nourishment, or employ treatment for catarrh, or ulcer, or organic disease, when nothing of the kind is present."

THE INGLESBY LECTURES.—On September 2d and 3d MR. LAWSON TAIT, President of the British Gynæcological Association, delivered two lectures on "Recent Advances in Abdominal Surgery," in the Queen's College, Birmingham.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, August 16, 1886.

E. J. Doering, M.D., President, in the Chair.

Dr. F. E. Waxham presented a

MEMBRANOUS CAST OF THE TRACHEA AND LARYNX.

The specimen presented was removed from a child nine years old. This cast had remained in the larynx and trachea for several months. The patient was brought to me from Minnesota by Dr. McDavitt, of Winona. The history is as follows: The child claims that in April she swallowed a hedge thorn while away from home. She was at once taken with suffocation, and twenty-four hours afterwards was operated upon when at the point of death, by Dr. McDavitt, who performed tracheotomy. The child was unable to breathe through the natural passages after the introduction of the tracheotomy tube, although many attempts were made to remove it. It seemed impossible for the child to get a breath through the natural passages when she was brought to me. Upon laryngoscopic examination the larynx seemed to be closed, but digital examination revealed a very small opening into the larynx. In this opening a small sound was passed and this was followed by one of the smallest size intubation tubes, this by a larger one, and finally the largest size tube was introduced. It could not be passed on account of the tracheotomy tube, and violent vomiting ensuing the tube and this cast were ejected. After the rejection of this membrane a large sized tube was introduced and pressed down into position, as the tracheotomy tube was removed, which gave the child perfect comfort. She remained comfortable after the introduction of the tube, took several glasses of milk during the afternoon, and in the evening was taken to the train and returned to Minnesota, the intubation tube remaining in the larynx to be removed by the doctor in the course of a few days.

Dr. John B. Hamilton, of Washington D. C., read a paper on

THE RADICAL CURE OF INGUINAL HERNIA,

(See page 256.)

Dr. D. W. Graham said: I think I express the sentiments of every member present when I say that it is probably not possible to find in the English language as complete and satisfactory a review of the history of the various operations for the radical cure of hernia as Dr. Hamilton has given us in this paper. Certainly it has been gratifying and instructive to us all to listen to it. Some of the figures which the Doctor quotes give us an idea of the great prevalence of hernia. I believe reliable statistics show that on an average about every fifteenth or sixteenth individual in civilized communities suffers from some form of it. When we remember this great prevalence, and when we remember that every subject of a hernia sustains thereby a certain amount of disability, and that very many are entirely disabled by it, the subject of the radical cure of hernia assumes an importance not always accorded to it. I think the author of the paper takes rather a highly colored view of the future of these operations. It is not probable that this generation, at least, will be able to use the expressions he thinks surgeons will be using some day in Chicago. However, this degree of success is to be looked forward to and attained if possible. In regard to the modern methods of operating, I understand the distinctive features of Wood's method to be that it is almost entirely subcutaneous, that he uses wire, and that he allows the sac to remain in the canal as a kind of plug. So far as I know, this method is not practiced in this part of the country to any extent. In Mr. Wood's hands it seems to be successful in permanently curing a considerable majority of those operated upon, and in decidedly benefiting a good many who are not permanently cured. His statistics show that there is almost no danger to life from the operation itself, at least in his hands. Any method which will give such results and at the same time involves so little risk to life, must be a good operation.

The open method, the one chiefly practiced in this country, according to my observation, contemplates strict attention to antiseptic details and the avoidance of suppuration. It involves a little more risk to life from the operation *per se*, but to compensate for this it would seem to give, theoretically any way, a larger per centage of permanent and complete cures. The modifications or varieties consist chiefly in dealing with the sac. Although MacCormac claims that unless the rings are wide there is no advantage in attempting to close them. It seems to me the best way to treat the sac is to excise a section of the neck between two ligatures, pushing the stump into the abdominal cavity and allowing the body of the sac to remain, unless it is small and loosely adherent, when it may be extirpated. After any of these operations there remains the funnel-like depression on the inner surface of the abdominal wall, which favors a recurrence of the hernia however efficiently we may have obliterated the sac and closed the rings. MacEwen, of Glasgow, in a recent article describes and advocates a plan he has devised for obliterating the depression. He utilizes the sac by dissecting it from its surrounding attachments, putting a suture through it from side to side beginning at the lower end, thus making a corrugated pad, which he pushes through the internal ring into the cavity, after first separating the peritoneum for a little distance aroung the ring with the finger. This makes a convexity on the inner surface of the abdominal wall, when there would otherwise be a concavity. This modification appears to be a real improvement, but the practical value of it is as yet largely conjectural. By way of adding something from an historical standpoint, I might mention, what I think was not alluded to in the paper, that electrolysis has been used and advised to set up a plastic inflammation in the inguinal tract. I believe this suggestion comes from a Cleveland surgeon, whose name I have forgotten. This is the same in principle, of course, as the use of subcutaneous injections, and I should think

would be preferable to the injections, if I were to judge of it without having tried it.

DR. MOSES GUNN said: This subject is of intense interest, and we are very much indebted to Dr. Hamilton for the exhaustive review he has given us. We have to consider what are the best methods for operating with the intent of effecting a radical cure. I am inclined to discard all the old invaginating processes. In the first place, the invaginated portions are always liable to subsequent prolapse; in the next place, it is always a foul mess. It won't do to simply remove the cuticle; all the organs of the skin must be destroyed. The skin contains the hair, sweat and sebaceous follicles, and unless they are destroyed, they will continue their work, and thus accumulate material for decomposition. In order to make a success, you are obliged to do more than destroy the cuticle. You will have to destroy the skin, and that is a very slow process and exceedingly nasty. Therefore I am inclined to repudiate all invaginating processes. I repudiate, also, all of the subcutaneous processes, for they are blind procedures, and I would not adopt them where an open operation could be as well, and even more advantageously and safely resorted to. I believe the best and surest method of trying to effect a radical cure of hernia is the open method. This method should be performed in every case where an operation is made for the relief of a strangulated inguinal hernia. Just as soon as the operator has opened the neck of the sac and restored the prolapsed viscera or viscus, he should close up the wound. He should begin at the topmost portion of the sac, and with a curved needle and catgut take it up and ligate it as near to the internal ring as he can. Then he should drop down about half an inch lower and ligate again, and so on down through the canal. He should then approximate the pillars at and above the external ring as closely as possible and close the outside tissues. Thus the operation which is made for the relief of the accident should be made an operation for radical cure. It can be done more effectually at that time than any other.

Then again, the physician is called upon to make an operation for a radical cure; the patient comes to him complaining of the truss, which has become ineffectual, the hernia escaping in spite of it, and his life becoming a misery to him, and he asks if something cannot be done to make a radical cure. The answer is, "yes;" but the question is, by what method shall we make it? I say by an open operation, practiced with all antiseptic precautions. Cut down upon the parts, separate and dissect out as well as you can the neck of the sac, the hernia having been reduced; ligate the sac and cut out a portion. Thrust the stump back into the canal and approximate the pillars, closing them tightly and keeping the external ring tightly closed. So much for the method; now for the prospect of success. How much right have we to expect what might justly be called a radical cure? By the term radical, I mean permanent. In what proportion of cases can we expect to have a permanent cure, so that the patient will never have hernia again? What is hernia, and who have it? I think I can safely say that the typical man never has hernia. When the true type in development has been attained and the abdominal walls closely woven together, they are proof against such accidents and there will be no hernia. Hernia is the result of the imperfect development of the abdominal muscles and aponeuroses. When that imperfect anatomical development obtains in the patient, the abdominal muscles are thin and flabby, and in such cases we get hernia. Nor can we in such a case by an operation make a man better than his Creator made him, but if we can make him as good as he was we may congratulate ourselves. After we have operated and closed up this weak point as well as possible, the very best result that we can expect is that we have made the man as good as he was before he had hernia; but, if he was weak enough to have hernia from certain exciting causes, he will be weak enough to have it under similar circumstances again. If his hernia is brought on by lifting and straining, the same exciting cause will bring it on again, and under these circumstances a radical cure is only measurably radical. We should tell the patient after operation that if he will be more careful and take no violent exercise, he may hope for exemption from hernia.

In other cases, the patient has an old and immense hernia and cannot wear a truss; we operate upon him and can say to him that if he will be more careful and wear a truss, he can be tolerably comfortable for the rest of his life. Such, I apprehend, is the true aim and scope of operations for the radical cure of hernia; such are the precautions we should give our patients, as they must become our coöperators in order to make this operation a success; and with such coöperation and conscientious efforts on our own part, radical cure of hernia becomes a standard and important operation, as important as the subject itself, which, as we have seen, is of immense importance on account of the great dissemination of the disease.

DR. E. F. WELLS said: Dr. Hamilton has certainly read a very interesting and extensive paper. There is one point in particular mentioned by the author, namely: that he advocates an operation in all suitable cases where an operation is not distinctly indicated. Every practitioner of large experience must certainly have met with many cases in which the truss has been applied resulting in a cure, and I think the truss should not be stricken entirely from the radical cure of hernia.

DR. HAMILTON in closing the discussion said: I need not say that I am extremely gratified to find such substantial unanimity of sentiment as to the propriety of operation—nay, as to the necessity of operation, but there can be no doubt as to the necessity of further statistics on the subject. In regard to invagination, I think a reading of the paper will not show that I advocated the method of invagination recommended by Gerdy. In the recent open method there is no invagination. Under the original Wood's method, the subcutaneous fascia only was pushed up under the ring; by the open method we cut down directly on the sac. This open method is really a combination method, because it brings together the pillars and takes care of the sac. Statis-

tics are necessarily unreliable as to the ultimate permanency of the cure of these cases. The best statistics are those shown by the Swedish Hospital, where out of 300 cases a large percentage of recoveries is shown, and if statistics are worth anything in determining the success of a method, we must place some reliance on these. It would be well to have patients come back every year for the purpose of re-examination.

Dr. Fenger, if I correctly understood him, speaks of the influence of suppuration in curing these wounds by letting them heal from the bottom, but in the various subcutaneous operations that is exactly what it is intended to avoid. There is no doubt that suppuration will make a radical cure of hernia if the patient's strength lasts, and the suppuration does not extend into the abdominal fascia. That was the method by which the old red-hot irons accomplished their purpose. The mineral acids produced a radical cure by the destruction of the tissue and healing from the bottom. The seton also performed a cure, but it has so many disadvantages that it is not to be compared with those procedures that stop the inflammatory processes short of the decomposition or death of the exudate. In regard to operating on children, I think the argument cannot be regarded as sound that we should not operate on them on account of the difficulty of keeping a bandage on, for surely if any cases are to be benefited by an operation for radical cure, they are those in which the patient is young enough to grow—in which the tissues can be brought together and retained with great hope of a permanent cure. Everybody knows that cases do recover by the use of the truss, but the proportion, I believe, is less than by any other method. As stated by Professor Gunn, it is found that a majority of operations for strangulated hernia are, in effect, really operations for the radical cure, and there are more than five cures from operations to one after application of the truss. And when we remember that there are 250,000 trusses manufactured per annum in Philadelphia alone, I doubt very much if it can be shown that trusses have even a fair percentage of recoveries following their use.

Dr. Wm. T. Belfield reported a case of

SUPRA-PUBIC CYSTOTOMY WITH EXTRACTION OF LARGE CALCULI, AND CORROSIVE SUBLIMATE POISONING.

The patient was a feeble, emaciated man, 71 years old, who for nine years had suffered from cystitis of steadily increasing severity, caused, as was supposed by his various physicians, by prostatic enlargement. He had been sounded for stone a year ago under chloroform, but with negative result. For two years he had been unable to empty the bladder except by catheter. He refused permission to introduce the sound because convinced that he had no stone, but was anxious to have an operation for the removal of the prostatic enlargement.

June 7, supra-pubic cystotomy was undertaken for the purpose of removing by galvano cautery that portion of the prostate which was assumed to project into the bladder. The introduction of the sound under ether revealed a large stone; the usual incision was made; the finger in the bladder found two calculi, one behind the prostate, the other adhering to the fundus of the bladder, each about as large as a walnut. The first stone was crushed and the second with much difficulty removed entire. The patient was so collapsed that no attempt was made to remove the prostatic outgrowth, which could have been accomplished without much difficulty, and the following day the temperature was 100.5°, the highest observed. On the third day it was normal and so remained. The wound was irrigated once daily with a bichloride of mercury solution. The progress was entirely favorable until the eleventh day, when there began a severe diarrhœa with much rectal pain and tenesmus, and later the evacuations were tinged with blood and the patient complained of a metallic taste. Sublimate poisoning was recognized and the solution discontinued. Temporary improvement followed, but death ultimately resulted on the thirty-sixth day after operation. No autopsy was permitted, but a hasty examination of the abdominal contents was made. Peritoneum, kidneys and bladder were normal, except that the latter was much hypertrophied. The intestines could not be opened; the calculi weighed 2 ounces and 6 drachms.

THE DEATH OF DR. F. H. HAMILTON.

Dr. Truman W. Miller offered the following resolution, which was adopted:

Whereas, This Society has learned with deep regret of the death of Dr. Frank Hastings Hamilton, of New York, and

Whereas, In his death the United States has lost one of its most distinguished surgeons; one of its ablest teachers; one of the purest patriots, and, in his private life, one of the most amiable of men; therefore, be it

Resolved by this Society, that we hereby give public testimonial to the many virtues of the deceased, and that we tender his family the assurance of the profound sympathy of this Society with them in the hour of their affliction. And that a copy of these resolutions be furnished them, and a copy spread upon the records.

SUFFOLK DISTRICT MEDICAL SOCIETY.

Section for Clinical Medicine, Pathology and Hygiene.

Stated Meeting, May 12, 1886.

Dr. F. L. Knight, Chairman.

Albert N. Blodgett, M.D., Secretary.

Previous to the papers of the evening, the Chairman announced that Dr. Bowditch desired to address the Section.

Dr. Bowditch said that he had three articles which he would present to the Section, two of which would be hereafter placed in the portfolio of the Boston Medical Library. They all held important relations with the history of medicine, and he thought they would be interesting to the members.

First. A splendid lithograph of Vesalius, "The

Father of Modern Anatomy." No one could look at it without feeling that if Vesalius had not been great in our profession, he would have been great in any walk of life. One could believe from his fine commanding brow and calm look that he might have been a statesman. He was born in Brussels in 1514, and died in 1564 of starvation in the Island of Zante, where he had been shipwrecked on his return from a pilgrimage to the Holy Land. Accused by the minions of the Inquisition of having begun to dissect a man while the heart was still palpitating, he was saved from death only by the favor of Philip II, to whom he was chief surgeon. He had taught anatomy at Pavia, Bologna and Pisa from 1540 to 1544, and had large crowds of students to hear him. His immortal work, "De Corporis Humana Fabrica," in seven volumes, was first printed at Basle in 1543. Boerhaave and Albinus published another edition in folio in 1725 at Leyden.

Second. A pharmacopœia published at Cologne with Petrus Holzeming as editor, a worthy man doubtless, but now wholly unknown to fame, so far as biographical dictionaries are able to tell us. It is a thin folio volume, with large, well engraved title-page. At the top are the armorial bearings of Cologne. Below is a view of the city. On the side, are four physicians, namely: St. Luke, St. Parataban, St. Agmar, and St. Damianas. The last three suffered martyrdom in the fourth century. St. Connes was for many years the patron saint of physicians. A church dedicated to his memory in the thirteenth century was taken down in 1832. At one time the fraternity of priests of St. Connes taught medicine there. Ambroise Pare in the sixteenth century gained his title of Master Surgeon from that Faculty. The pharmacopœia is a most interesting work, as illustrative of the absurd lengths our fathers in medicine went in the number of articles put in their prescriptions. Generally speaking there were one or two active ingredients, as aloes, opium, hyoscyamus, etc., in a prescription, and the remainder were inert. The most remarkable in the book is an electuary powder. It contains fifty four ingredients and was styled "Pulvis Subtilissimus."[1] In this prescription, human nature had evidently gone to the utmost extreme of over-medication. The whole book with its absurd remedies seems to prophesy homœopathy, with its single and equally absurd infinitesimals. Man never goes toward the truth in a straight line, but in a pendulum course.

Third. A photograph of a painting by Watteau, caricaturing in pencil after Moliere had done so with his pen, the absurdities of the faculty and the extremes to which the public were led by eulogiums on the use of the "clystere." Moliere wrote his "Malade Imaginaire" for the opera of the king and noblesse. Watteau, coming after him a few years, painted the scenery on the same stage. The painting which the photograph represents is in the museum at Lille, in France. It shows an immense army of people coming to meet the great Doctor, who is dressed in fur-bordered robe, with feathers in his hat. He stands erect with immense gravity and an important look, his right arm extended as if giving decided directions in regard to a patient who is about to have an enema given to him. An immense crowd looking like an army covers the background, each person armed with a huge syringe, instead of the usual trappings of war. Upon the top of the staff, bearing the color of the regiment, instead of the imperial eagle appears an upturned chamber utensil which shall be nameless. Various groups are seen in the foreground, of a most realistic character. A lady with glutei and legs exposed, and two negroes administering an enema. A lady with her lapdog on her arm and her husband are apparently leaving the scene, but are followed by an attendant of the doctor, armed with a syringe, who is evidently entreating her to allow him to give her an enema. On the other side of the picture is a burly postman, set upon by two attendants, one of whom has pulled the hat over the eyes of the struggling victim, while the other is preparing to give him the injection, which one sees the postman will not readily submit to. But most comical of all is a poor, evidently costive dog, with curved back, plainly striving in vain for a dejection, and mutely appealing for an enema for his relief. One has only to read the "Malade Imaginaire" of Moliere, to get a full explanation of this gross caricature. At the same time it shows the absurd length to which our fathers went in regard to the rectum, as according to the pharmacopœia above described, they had a half century or more before, filled the mouths of their patients with their subtle powders. Who can wonder at homœopathy and eclecticism in consequence of such nonsense.

[1] Duke Don Nicholas, so called because prepared by an abbot for the son of Don Nicholas.

DR. GRACE WOLCOTT read a paper on

A CASE OF ULCERATIVE ENDOCARDITIS.

(See p. 264.)

DR. F. C. SHATTUCK, upon being invited to open the discussion, expressed his interest in the well reported case which had just been read. The pathology of endocarditis in general presents problems at once interesting and difficult, to the solution of which we thought ourselves nearer some years ago than we do to-day. Until lately the real distinction between ulcerative and simple endocarditis was thought to lie in the presence in the former of micrococci, and the term diphtheritic endocarditis was proposed to characterize the process at one time. To these organisms the infectious nature of the affection was attributed; to them it was thought to be due that emboli excited suppurative inflammation about their points of lodgment. This distinction now fails us since Klebs, Köster and others find micrococci in the products of any and every endocarditis, without having succeeded as yet in distinguishing between those accompanying forms which are clinically so different. Anatomically the difference is rather one of degree than of kind, and hence Osler prefers the term malignant to the term ulcerative. In an endocarditis of malignant course there may be no more ulceration than in a benign case of warty endocarditis; and, on the other hand, there may be well-marked ulceration from very different causes. The main anatomical distinction is

in the different results of embolism; as to the pathological distinction we are at present ignorant; the clinical distinction is more clearly marked. Thus we are led to the eminently practical question of diagnosis. In some malignant cases the diagnosis may be made with tolerable certainty. We know that the process is especially liable to attack valves which are the seat of changes dependent on previous disease, notably sclerosed valves; and hence grave typhoid or pyæmic symptoms, for which no other cause can be assigned, in an individual known to be the subject of old valvular disease are, to say the least, suggestive. Similar symptoms with indications of embolic abscesses in a case of acute rheumatic endocarditis are, in like manner, suspicious; but this association is, according to Osler, rare. In cases of primary malignant endocarditis the diagnosis may be reached by a happy guess, but is generally beyond our powers. The general symptoms vary very widely in different cases, simulating typhoid fever, pyæmia, malaria, or some other general infectious disease; the leading symptoms may be cerebro-spinal; symptoms pointing to the heart may be wanting or excessively obscure. If the heart was previously healthy the organ is not enlarged and the course of the disease is usually too short to allow it to become so; while a souffle can easily be attributed to so-called dynamic causes. A case which recently occurred at the Massachusetts General Hospital, in the service of Dr. Abbot, the autopsy on which the speaker attended, well illustrates the impossibility of diagnosis at times. A woman died after an illness of ten days or so, with ill-defined but rather typhoidal symptoms and no indication of cardiac disease. Primary ulcerative or malignant endocarditis limited to the tricuspid valve with emboli in the lungs was found. The speaker had seen two or three cases in life in which he had suspected this form of disease, but had not been so fortunate as to secure an autopsy to overturn or confirm the diagnosis. He congratulated Dr. Blodgett both on the diagnosis in the case just reported and on its verification.

Dr. E. G. Cutler expressed much interest in the case reported He had never seen an instance of ulcerative endocartis at autopsy, but had had, a few years ago, a patient under his care with the following history; a child of 6 had passed through an attack of mumps, under another physician; two other children were sick with the disease about the same time. Some days afterwards the child, having been all the time ailing, was seized with chills, fever, pain in the præcordia, and restlessness. There was found to be a loud systolic murmur at the apex. The patient got worse, the circulation in one of the arms suddenly ceased, accompanied by pain and swelling. The femoral artery in one of the legs became plugged soon after, associated with severe pain. The murmur ceased before death, which occurred about a week after the patient was first examined.

Dr. H. I. Bowditch stated that he had never seen a case of this disease in his life, and that the condition was unknown to him. The specimen was a most interesting one, and showed a new source of danger in diseases of the cardiac tissues. Dr. Bowditch asked if the diagnosis of ulcerative endocarditis were made before death, and if so, on what grounds was this opinion based?

Dr. Blodgett replied that he had the privilege of examining the patient before death, and from the history of a long-continued organic disease of the heart which had been studied by careful physicians for many months, to which a new and most serious complication had been suddenly added, he was led to review the conditions to which this unexpected change might be due. The character of the symptoms observed at this time was essentially that of acute septicæmia; that is, there was acute pain in various parts of the body which were not before the seat of disease. The pulse and temperature were very high, the patient was in a condition of stupor, almost amounting to apathy, and resembled the state called "typhoid" in many asthenic diseases. The array of symptoms thus calling attention to a condition so closely approximating to that of surgical pyæmia, it seems only a short way to the diagnosis which alone would sufficiently explain the symptoms. The autopsy was of necessity very hastily made, and gave no time to examine the other visceral organs, which might possibly have shown other interesting pathological conditions connected with the state of the heart.

Dr. Shattuck said that in any case of endocarditis we may have embolic formations in the blood-vessels. In benign endocarditis the emboli do not occasion suppuration, while in the form of endocarditis which we may for the sake of comparison call "malignant," the emboli are followed by suppuration, and the appearance of a train of clinical phenomena bearing considerable resemblance to septicæmia.

Dr. Bennett F. Davenport spoke of the

PHYSICAL AND CHEMICAL QUALITIES OF ORDINARY COWS' MILK,

and added: The question of the age of the milk which is given to our city children I consider as of very much greater importance than it is usually deemed by physicians. There is no fluid that I know of which is a more rapid absorbent of foul odors of all kinds, or which offers a more fertile field for bacterial growths. Yet most of the milk, even when just delivered to the consumers in this city, is already in its third day of age, and has been exposed to a probability of contamination so great that I very much wonder that it does not become downright soured before the time of the next daily delivery. Very much of it is but little short of this stage. I am firmly persuaded that it is to this changed condition in the milk, to which city folks have become so accustomed as to consider it the proper and natural condition, that a very large proportion of the summer diarrhœa and the resulting mortality among the children in our cities is due. If any one wants ocular proof of the grosser forms of contamination to which city milk is exposed, he has but to visit any of the larger milk depots of the city, and to look at the nature and the quantity of the foreign material left upon the cloth strainers connected with the centifical machines used for separating the cream from the surplus milk of the day. If he does not then learn by seeing with his own eyes what he could otherwise hardly be brought to believe to be

possible, I am very much mistaken as to what are the real facts. Very fortunate indeed would it be, if only the firm and already dissolved impurities could also be thus readily separated out from the milk.

We, as physicians, have learned to know that milk about upon the point of changing will more disturb the digestion of a child than that which has already turned sour. I believe that the difference in the coagulation of breast and cow's milk in a child's stomach is more owing to the difference in the chemical reaction of these two milks, and in the amount of albuminoids contained therein, rather than to any difference in the nature of these albuminoids, for cow's milk, even when fresh, is of an acid reaction, while breast milk is neutral, or may be slightly alkaline. Then, too, cow's milk contains a much larger amount of albuminoids. Making cow's milk of a neutral or slightly alkaline reaction will render this curd finer and softer, and this is also accomplished by diluting with fluids or with soft solids, for which barley flour or malted extract serves well.

When it is desired to add cream to the diluted and sweetened milk when prepared for a child, I think it is better here in the city to use sweet cream raised by the centrifical machine, rather than that obtained by separation from standing, which necessitates it being just so much the older, when one of the chief troubles is that it is already too old. Such sweet cream is to be had of the large milk depots in the city.

I think that if physicians would instruct all their patients to demand that milk be delivered to them the same day that it is brought into the city from the country, this would become the more common custom of the trade, and that there would be a marked decrease in the infant mortality during the summer months, for if we cannot secure proper cleanliness in the care of the milk, we might at least thus shorten materially the time during which fermentative contaminations would have a chance to work out their harmful changes.

DR. GEORGE W. GALVIN exhibited an

IMPROVED INHALER,

which he described as follows: The inhaler is the invention of Dr. Geo. A. Evans, of Brooklyn, New York, and a full description of it, with a group of cases treated by him, was published in the *New York Medical Journal*, March 6, 1886. The great obstacle to overcome in the local treatment of pulmonary diseases, is the condensation of the vaporized medicament in the mouth, pharynx, and upper air passages. This has been overcome by Dr. Evans's instrument, which can reduce any fluid medicine or solution to so fine a degree that it can pass the bronchial tubes without condensing and reach the air cell of the lungs in which is stored the residual air. The changes in the lungs in pulmonary phthisis bring consolidation, tissue necrosis, putrefaction, decomposition, and septic absorption (I am not now considering tubercle, its nature, etc., but what is considered pulmonary consumption); it is natural to suppose that if we can convey to the lung an antiseptic vapor which will reach the part undergoing the pathological changes, we should obtain practical results from the local treatment of pulmonary affections.

The apparatus consists of an air condensor, an air chamber (flask) for preserving a continuous current of air, a three-mouthed bottle, "Wolf's;" a spray chamber having three mouths; spray tubes; respiratory tube; mouth-piece.

A spray of the solution in the bottle is thrown (by means of compressed air), against the opposite wall with sufficient force to produce a thorough churning with the atmospheric air, a fine vapor, resembling cigar smoke, which escapes through one of the openings in the glass air chamber to the respiratory tube.

During inspiration through the mouth-piece, air enters the middle mouth of the bottle and displaces the vapor of which the bottle is full. During expiration the air in its turn is displaced, passing out of the middle mouth of the bottle, to make room for the vapor which passes from the glass air chamber to the bottle, where it accumulates for the next inhalation.

A vapor produced by means of this apparatus condenses slowly, fifty cu. in. of a vaporized solution, containing carbolic acid, borax, glycerine and water, requiring twenty minutes of a temperature of 60° F. to entirely condense.

Ten cases are now reported in this journal with a cessation of symptoms which leads the patients to consider themselves cured. One case of my own far advanced in the second stage of chronic catarrhal pneumonia, after ten inhalations has gained in ten days two and one-half pounds, and to all intents and purposes is making a rapid recovery.

DR. W. EVERETT SMITH then exhibited a

SEMPLE'S ATOMIZING INHALER

which he has been using in connection with Williams' Pneumatic Cabinet. This inhaler was devised by Wm. F. Semple, of Mount Vernon, Ohio, in August, 1881, and consists of a glass receptacle containing an ordinary atomizer. The medicament is held in the bottom of the jar and is atomized either by a rubber hand bulb or more effectually by a cylinder of compressed air. The spray is projected against the top of the jar, the larger particles are condensed to be re-atomized and only the very finest portions of the spray escape through the inhaling tube.

The vapor thus inhaled has been so churned as it were and broken up that it is as fine and impalpable as smoke, and indeed resembles it in appearance. The mouth-piece to the inhaling tube can readily be removed and attached to a flexible rubber tube so that the vapor can be conducted wherever and in whatever direction one pleases. Any fluid that is readily atomized may be employed, the best menstruum being either fluid petrolatum or a 20 per cent. solution of glycerine in water. The resulting vapor will resist condensation for from five to fifteen minutes.

The atomizer was shown to be identical in its principles of construction with the Evans' Inhaler that was exhibited by Dr. Galvin, and when attached to the cylinder of compressed air produced as fine and perfect a vapor as Evans' apparatus. It has, however, these differences in its favor—is simpler in its construction, more easily cleansed and was perfected and in use *four years* before Dr. Evans set up his claim; yet Dr. Evans calls his atomizer a "*new instrument.*"

Further than this, Dr. Evans in his article in the *New York Medical Journal* of March 6, 1886, makes no mention of and gives no credit either to the Semple Inhaler or to the Globe Inhaler of Beseer.

Dr. Evans' apparatus is faulty in two particulars; the inhaling tube is long and is complicated with three glass globes which must be kept thoroughly antiseptic if we are to assign any dangerous activity to the numerous germs of disease. The patient under treatment must moreover inhale and likewise exhale through this one tube, the three glass globes and the Wolff bottle which contains the medication; each patient ought therefore to have an entire atomizer reserved for his own particular use, since it would be practically impossible to cleanse *thoroughly* all this complicated arrangement after each application.

Dr. Evans claims, however, as an advantage in favor of his apparatus that the vapor will resist condensation for twenty minutes. But is easily demonstrated that with any form of atomizer constructed upon these principles, the increase in the resistance to condensation depends *directly* upon the increase in the specific gravity of the fluid atomized and not upon the particular *shape* of the atomizer.

The very fact, however, that the vapor refuses to condense for so long a period as twenty minutes is an objection rather than an advantage to the method of treatment. Everyone grants that ordinary atomizers are of little benefit in the treatment of lung diseases, because the vapor from them condenses almost entirely upon the mouth and pharynx. At the same time no physician would demand that a patient suffering from pulmonary phthisis should actively inhale a medicated vapor longer than twenty or twenty-five minutes at any one time because of the physical exhaustion that would follow a longer treatment. If then the vapor that is inhaled resists condensation for so long a period as twenty minutes, Dr. Smith claimed that it is *just beginning* to be deposited upon the bronchial tubes when the treatment is stopped. He had been better satisfied with the results obtained by a vapor that did not resist condensation for nearly so long a period as that claimed by Dr. Evans.

At the same time Dr Smith claimed it to be a fallacy that by the use of either the Semple or the Evans' Inhaler atomized vapor can be deposited upon *lung cells*, especially if they are diseased so that they are unable to be readily expanded. The vapor when finally churned in these inhalers may be deposited and very likely is deposited upon the larger bronchial tubes, but we must remember that bronchial tubes are very different from air vesicles and that the volume of air which we ordinarily breathe—the *tidal* volume—reaches *directly* only the trachea and large bronchi, but enters the air cells in obedience simply to the law of the diffusion of gases.

Unless, therefore, some of the external pressure of the atmosphere be removed from the chest walls, as it is in the Williams' Cabinet, so that the *complemental* volume of air can be inhaled *involuntarily* into even remote air vesicles, the only medication that can effectually reach any decided area of lung cells must be gaseous in form. But however finely you may divide aqueous vapor under ordinary conditions of temperature and atmospheric pressure, you cannot make it gaseous, for a gas is not condensed except under enormous pressure and at exceedingly low temperatures.

Dr. Smith accordingly, while praising the inhalers that were exhibited, maintained that to derive their greatest benefit they should be used in conjunction with some form of the Pneumatic Cabinet. He has used the inhaler with the cabinet since last December, and has found the results to be highly satisfactory and encouraging.

Dr. Bowditch said that one of the important objects of any inhaler was to force the substance to be inhaled into the pulmonary structures as much as possible. Whatever the arrangement for inhalation may be, the object to be attained is the pulverization of the substance, and its forcible propulsion into the lungs. The inhaler shown by Dr. Smith is always employed in conjunction with the Pneumatic Cabinet, as an aid to its introduction or propulsion into the deeper parts of the pulmonary recesses.

Dr. Knight stated that the instrument exhibited by Dr Galvin was capable of producing a finely pulverized fluid, and he had never seen anything so fully answering this demand as the one shown at this meeting.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, May 19, 1886.

Vice-President, Wm. H. Taylor, M.D., in the Chair.

T. E. McArdle, M.D., Secretary.

Dr. Bermann presented a bottle full of

POLYPI REMOVED FROM A PATIENT'S NOSE,

where they had been growing for the past seven or eight years. The turbinated bones were atrophied and the septum driven to one side. Some of the tumors were gelatinous, but most of them were of a fibroid character.

Dr. Jos. T. Howard read a paper on

UROGLAUCIN.

About 1845 Heller discovered in urine a peculiar substance which he called uroxanthine, which, by further treatment with acid reagents at a high temperature, yielded a blue uroglaucin and a red pigment, urrhodine. These coloring matters, he proved, were similar to those which had been previously discovered by Braeonnot, in the urine, composing a substance which he (Braeonnot) called cyano urine, and Virchow and Kleitzinsky showed the identity of urrhodine with indigo red, and uroglaucin with indigo blue. It is the latter, apparently, occurring in the urine of a patient under my care, that it is proposed to speak of now. I say apparently, because the sequel may prove it to be something else; consequently, before detailing the case it may be of interest, if not edifying, to briefly consider the history and sources of "indigo blue," with its relation to the urine generally.

Indigo blue was first mentioned by Dioscorides as

indikon, next by Pliny as indicum. When first introduced into England it was called "indico." The principal source of this familiar coloring matter is, as you well know, the numerous indigiferous plants, mainly the indigifera dinctoria, anil, satisneurium and polyganum. In the process of manufacturing indigo the plants are steeped in water for a few moments, and after their removal from the liquid the latter is exposed to the air and frequently agitated to facilitate the absorption of oxygen, which produces the blue color in the water. If the water be allowed to rest awhile indigo is deposited as a pigment insoluble in water, alcohol, oils, dilute alkalies, and hydrochloric acid, but if slowly heated it volatilizes in purple vapor, which afterwards becomes condensed in delicate crystals, the chemical composition of which is expressed by the formula, $C_{16}H_5NO_2$.

In the urine, as stated by Heller, indigo was found in combination with urrhodine, forming the compound uroxanthine; from which his process of extracting uroglaucin was somewhat as follows: Urine recently voided is mixed with a hot solution of acetate of lead filtered and freed from an excess of the acetate by sulphuretted hydrogen, and boiled to free it from excess of the latter. The hot fluid is now constantly stirred and gradually added to an equal volume of concentrated fuming hydrochloric acid, which, if uroglaucin be present, should cause it to assume a greenish and very dark blue color. If the mixture assume a violet or red tint only, no indigo is present. If it does become blue, as just stated, and is allowed to stand for some time, a copper-red, shining, metal-like, dark crystalline pellicle appears upon the surface. After twelve hours the fluid is diluted with an equal portion of cold water, well agitated, and put aside for twenty-four hours, when a heavy deposit is formed which is separated by filtration and washed with boiling water until the washings have a neutral reaction; it is then washed with dilute spirits of wine and dried over sulphuric acid in the water stove. The dry filter is now washed with pure ether as long as any red color, urrhodine, can be obtained. For this purpose large quantities of ether, and a proportionate amount of time, are required to get rid of the urrhodine. Next, all that portion of the filtering paper which shows no blue deposit is cut off, and the remainder, divided into small pieces, put into a balloon and boiled strongly with absolute alcohol. As often as the alcohol assumes a sky blue, or greenish, color, it is poured off and a new portion added until, by protracted boiling, it becomes entirely colorless. The alcoholic extract, which has an acid reaction, is filtered whilst boiling hot, then evaporated down to one-half, and put aside in a well-stoppered bottle. When the fluid cools uroglaucin is deposited in spider-like petaloid.

The first record of blue coloring matter occurring in the urine is attributed to James Planeus, 1767; the first chemical description of a blue or violet coloring matter being found in the same was given by Braeonnot, who, as before mentioned, called it cyanourine. In one of Braeonnot's cases the urine, voided with difficulty, was of an intense yellow, which after standing gave a blue deposit. He relates another case reported by M. Julia, in which the blue color was attributed to the presence of prussiate of iron. (See *Ann. de Chem. de Phys.*, xxix, p. 252.) Braeonnot was followed in his discovery by Heller, Prout, and others.

Now in no instance on record, so far as I have been able to ascertain, except, perhaps, the cases of James Planeus and of M. Julia, can it be inferred that indigo was ever found spontaneously dissolved in the urine, but when present in that fluid was discovered only after a long and tedious chemical process such as has been detailed above; nor is there any account given of a simple blue urine having been emitted; consequently the case that I now present is the third, if not the first, to be chronicled in which urine of a dark blue color has been voided. For such indeed it was at that time, and did not become blue from decomposition after standing, as was the case mentioned of Braeonnot, and which it might have done in that of M. Julia, either within the bladder or after emission.

It is hardly probable, in the case now presented, that the change occurred whilst the urine was within the bladder, because the patient had, but a very short time before voiding the blue, passed a clear-colored urine; evidently, then, it was not in that vessel sufficiently long to undergo fermentation, although indican possibly may have been present in the urine previously passed without attracting attention, for Schunek says: "Urine containing uroxanthine exhibits no remarkable or peculiar appearance whatever to the naked eye; it is acid clear and of the usual color." This learned investigator found indican so often in urine that he concluded it must be a normal constituent of the fluid. Heller, however, found it most frequently in persons with disease of the kidneys and spinal cord—a circumstance which, as regards the last mentioned, coincides more nearly with the pathological condition of my patient, who for some time had been laboring under a severe attack of sciatica, in which the medulla spinalis, or its appendages, were more or less involved.

The following is the case: W. R., æt. 63, tall, of a spare frame, and sanguino-melancholic temperament, general health good, complained of great pain in the back and down the left lower extremity along the course of the great sciatic nerve and its branches, which, after a regimen of counter irritants, purgatives, and alteratives, showed signs of abatement and gave promise to the patient of an early recovery. One day after the usual morning visit, at which time all things seemed to have been progressing favorably, I was sent for in great haste, and upon entering the chamber of the man found him and his family in great consternation and, perhaps, some little alarm, on account of the blue urine exhibited, which the patient had but a short time before passed. Observing the anxiety of his distressed wife, and others around him, the invalid affected to treat the matter lightly, and jocosely remarked that he "had often heard of 'blue bloods,' but was not before aware of his being one of them." Although unable at the time to explain the phenomenon, I was satisfied from the patient's general condition that there was no cause for

uneasiness regarding him, and so expressed myself. Upon examining the urine I found it to be of a deep indigo-blue color, and being assured that it had been voided in that condition I was satisfied. If proof had been necessary it was present in stains upon the bed linen.

I very much regret that a portion of this urine was not taken for chemical investigation. How indigo is obtained from indigiferous plants, uroxanthine, and the urine itself, has already been explained; perhaps, by reverting to that part of the subject we may be obtain at least a negative clue to its formation in the case before us. The improbability, in my case of the blue color having resulted from decomposition of the urine within the bladder, or after it passed into the bidet, has been considered, and we know it was not subjected to any chemical process similar to that before detailed. Then, from whence came it? Perhaps it originated in the alimentary canal and was taken up by the absorbents through which it found its way into the blood, causing the patient to be, as he indeed supposed himself, blue blooded; from the blood it was eliminated by the kidneys, passed into the bladder, and from thence into the vessel. This is a very rational conclusion, when we consider the fact that the patient had been for some time taking iodide of potash, and having taken a meal that morning composed principally of amyllaceous substances, it may be that some of the iodide remaining in the stomach was decomposed by the gastric juice setting free the iodide, which, coming in contact with the starch in solution struck the blue color which was imparted to the blood in the manner indicated. This deduction is sustained by the well-known fact that one millionth part of iodine will give the blue color to a solution of starch outside of the body; from which it may be reasonably inferred that, in the instance in question, the same reaction occurred within the body; but if this be the case, was it uroglaucin or simply a blue color?

Dr. Acker had seen one such case in an hysterical woman who was suffering from chronic Bright's disease. She passed a pint of urine of a decidedly blue color. Uroglaucin has been discovered when disease of the alimentary tract is present; also in granular disease of the kidney.

Dr. W. W. Johnston presented a specimen of

PERITONITIS IN TYPHOID FEVER, WITHOUT PERFORATION.

Dr. A. Y. P. Garnett disagreed with Dr. Johnston as to the diagnosis. The only specific evidence present was slight enlargement of Peyer's patches. Was there not some tubercular degeneration of the mesenteric glands? Peritonitis may occur in many ways and from many causes.

Dr. Johnston contended that the characteristic lesions of typhoid fever were present. There are no determining symptoms except a morning decline and an evening exacerbation, together with the duration of the fever. Of course all local inflammations must be excluded. In the case under consideration the fever had lasted two weeks, with a morning decline and an evening rise of temperature. At the autopsy he found enlarged and inflamed Peyer's patches and solitary glands. There was also acute enlargement of the mesentary glands.

Dr. Taylor remarked that John Harley declares that in the Delta of the Mississippi some cases of malarial fever are found which cannot be distinguished from typhoid fever, because ulceration of Peyer's patches is present.

Dr. Johnston said he would include such cases under the head of typhoid fever.

Dr. D. S. Lamb presented a specimen of

PYO-SALPINX.

Uterus and appendages covered generally with lymph. Right Fallopian tube, distal portion, dilated and filled with pus, which readily escaped from fimbriated end, on pressure, into peritoneum. Ovaries showed small aqueous cysts.

From Mrs. C., aged about 35. A few hours after a fright on April 27, she had acute pain in the abdomen, followed by general peritonitis, and death one week afterwards. The necroscopy showed the intestines distended with flatus, all the abdominal viscera more or less united by adhesions, and a large quantity of pus in the cavity. The explanation of the case seems to be that the pus from the Fallopian tube found its way, at the time of the fright, into the peritoneal cavity and set up general inflammation, from which she died.

Dr. Lamb also presented a

LARYNX AND PORTION OF TRACHEA OF GENERAL TUBERCULOSIS.

They were taken from a man aged about 30, who had general tuberculosis. The mucous membrane shows many tubercles of the size of small pin heads, projecting from the surface; large ragged ulcer on under surface of base of epiglottis; another on each vocal cord, which was nearly destroyed; one on left cricoid, and several in trachea.

Necroscopy.—Much emaciation; dura mater normal; arachnoid showed numerous opacities, especially over sulci of convexity; Pacchionian bodies abundant along longitudinal sinus; pia mater along each middle cerebral artery showed minute tubercles, thick lymph and adhesions; there was lymph also on upper surface of left cerebellar hemisphere near median fissure. Brain substance generally consistent and normal, but fornix softened to a pulp; softening also on under surface of right optic thalamus; ventricles much dilated and full of turbid liquid; right choroid plexus indurated; small cavity in pineal gland. Lungs showed old adhesions, especially at apex of right: filled with miliary tubercles; large vomicæ in upper lobes. Liver normal. Spleen somewhat lobulated, firm old adhesions. Pancreas normal. Stomach not opened. Small intestine; lower portion showed ulcers, mainly occupying Peyer's patches, varying in size, and having the long diameter parallel with intestinal axis; corresponding peritoneum covered with minute tubercles and bands of adhesion. Vermiform appendix showed hour-glass contraction about midway of the tract; mucous coat of that portion opening into cæcum was deeply ulcerated; terminal portion nearly closed by the con-

traction named and filled with pus; its mucous membrane entirely destroyed by ulceration. Cæcum showed ulceration. Mesenteric and gastro-hepatic glands enlarged. Suprarenal capsules showed small tubercles (?). Kidneys normal. Bladder distended.

MISCELLANEOUS.

INTERNATIONAL CONGRESS.—The subject of Public and International Hygiene is likely to occupy an important place in the discussions of the ninth International Medical Congress, or rather of its fourteenth Section. We are glad to see that Mr. Simon is anxious to attend the Congress and take Vice-Presidentship of the Section. Mr. Simon, indeed, speaks in his letter responding to the invitation with some doubt as to his power to attend, but with a clear intimation of his desire to do so. Dr. B. W. Richardson and Dr. Thudichum both reply in most cordial terms to similar invitations, and accept a similar office. To those who know the imperfect health which Mr. Simon has lately enjoyed, the significance of his conditional acceptance is very great. The promoters of the Congress will take this as a sign of British good will towards their great and responsible undertaking. The important subject of International Quarantine is to be raised by the president of the section, Joseph Jones, M.D., of New Orleans. We could send to the discussion of such a subject no greater authority than Mr. John Simon. We are glad to be able to report a very general desire among leaders in London to be present at Washington in 1887. Whatever hesitation they felt some time ago in view of the divided state of feeling in America is now steadily giving place to a desire for the success of the Congress, and a wish to do anything they can to further it. We feel quite justified in saying that our best men in England and Scotland are preparing to go if they get any indication that their presence will be acceptable. Sir Andrew Clark, Sir Spencer Wells, Professor John Chiene, Professor Fraser, and we believe Sir William Turner, are all, according to our information likely to go.

It is not America alone that is interested in the success of the meeting at Washington, but the profession throughout the whole world, and we might add the world itself. When our profession meets internationally it is of good omen. We not only stimulate fraternity and scientific rivalry amongst ourselves, but every thought in advance and every medical discovery is a great boon for the human race and for all nations. We urge on members of our profession in the empire to strain a point to be at Washington on or before September, 1887, where, if report is to be trusted, a very hospitable reception awaits them.—*Lancet*, August 7, 1886.

THE HYGIENE OF THEATRES.—Given a spacious theatre, crowded during an evening performance for a period of hours, what is the difference of the effects on its atmosphere produced by the electric light or by gas, particularly as to the temperature and the generation of carbonic acid? Such is the problem which Dr. P. Renk, Professor of Hygiene at Munich, has just set himself to solve. Taking the Theatre Royal of that city, which is lighted by 1400 lamps on the Edison system, he tested the two kinds of illuminants, with the following results: During a representation which lasted from 5:30 P.M. to 10:15 P.M., and was witnessed by 1790 people, he found that while the rise in temperature in the pit was 11.1° C. with gas, it was only 7.7° C. with the electric light, and that in the upper gallery it was 10.7° with the former, and not more than 7.4° with the latter. As to the increase in the production of carbonic acid, the results were equally important. In the pit it was 2176 with gas to 1221 with the electric light, and in the upper gallery as 2855 with the first to 1430 only with the second.—*Medical News*, July 24, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM AUGUST 21, 1886, TO AUGUST 27, 1886.

Major A. A. Woodhull, Surgeon, granted leave of absence for fourteen days, to take effect on or about Sept. 1, 1886. (S. O. 197, A. G. O., Aug. 25, 1886.)

Major M. K. Taylor, Surgeon, leave extended one mont (S. O. 195, A. G. O., Aug. 23, 1886.)

Capt. J. V. Lauderdale, Asst. Surgeon, granted leave of absence for two months, with permission to apply for one month's extension, when his services can be spared. (S. O. 195, A. G. O., Aug. 23, 1886.)

First Lieut. Chas. M. Gandy, Asst. Surgeon, on expiration of his present leave of absence, relieved from duty in the Dept. of the East, and assigned to duty in the Dept. of Texas. (S. O. 195, A. G. O., Aug. 23, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 28, 1886.

Clark, John H., Medical Inspector, ordered to special duty, Portsmouth, N. H., and Widow's Island.

Kindleberger, D., Medical Inspector, ordered to hospital, Washington, D. C., Oct. 1, 1886.

Gihon, A. L., Medical Director, ordered to hospital, Mare Island, Cal., Oct. 15, 1886.

Robinson, Somerset, Medical Inspector, detached from hospital, Mare Island, Cal., Oct. 15, 1886, and wait orders.

Spear, J. C., Medical Inspector, ordered to Naval Laboratory, New York, Sept. 28, 1886.

Bloodgood, Delevan, Medical Director, ordered to hospital, Norfolk, Va., Sept. 29, 1886.

Taylor, J. Y., Medical Director, ordered to Naval Laboratory, New York, Sept, 29, 1886.

Dean, R. C., Medical Director, detached from Naval Hospital, New York, and wait orders.

Simon, W. J., Surgeon, detached from U. S. S. "Constellation," and special duty at Naval Academy, Annapolis, Md.

Henry, C. P., Asst. Surgeon, ordered to hospital, Philadelphia, Pa.

Pitts, H. B., P. A. Surgeon, detached from hospital, Philadelphia, Pa., and wait orders.

Stone, E. P., Asst. Surgeon, ordered to receiving ship "New Hampshire."

CORRIGENDUM.

In Transactions of the Chicago Gynæcological Society, June 18th—appearing in the last issue of THE JOURNAL—Dr. Wm. H. Byford is reported to have read a paper entitled "A Study of the Cause and Treatment of Pelvic Hæmatoceles." Dr. H. T. Byford was the author of the paper.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, SEPTEMBER 11, 1886. No. 11.

ORIGINAL ARTICLES.

CLINICAL ASPECTS OF RENAL CANCER, WITH REPORT OF TWO CASES.[1]

BY JOHN A. OUCHTERLONY, A.M., M.D.,

OF LOUISVILLE, KY.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE AND CLINICAL MEDICINE IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE.

Malignant disease of the kidneys, regarded from a clinical point of view, occurs either as a primary or secondary lesion. Clinically the latter is of little importance, and the present study will be confined to the primary form. For various reasons the subject is of more than common interest:

First.—This lesion is quite rare, and our knowledge of it dates back only to very recent times. When Valleix[1] published his work in 1853, so few cases of renal cancer had been observed that he remarked: "One may say that no authentic case has occurred where malignant disease was limited exclusively to the kidney. Roberts[2] has been able to contribute only four cases as the result of his personal observations. During twenty-two years there were only fifteen cases of malignant renal disease in Guy's Hospital, London. All writers agree as to its infrequency.

Second.—The great diversity of the symptoms and the course of the disease render the clinical aspects of it varied, and sometimes not a little difficult.

Third.—The number of other pathological conditions which more or less resemble it, incite the clinician to increased vigilance and care in diagnosis, and add new pleasure to his efforts.

Fourth.—The difficulties encountered in the diagnosis are often very great, and the errors which have been recorded are quite numerous. Bright declares that among abdominal tumors, few are so difficult to recognize as tumors of the kidneys.

Cancer of the stomach and of the liver, pregnancy, ovarian tumors, enlargement of the spleen, abdominal aneurism, have all been pronounced as present in persons who afterwards were found to have malignant disease of the kidneys. More than forty years ago Rayer[3] called attention to a class of cases in which renal cancer remained entirely latent throughout its whole course to the fatal termination. Between this class and that in which characteristic tumor, pain, and hæmaturia distinctly signalize the disease, there are numerous cases in which the clinical phenomena group themselves in the most strange, unexpected and puzzling manner. May I not, then, venture without presumption to occupy this learned body for a few minutes with the clinical aspect of so important and interesting a malady, and one which, owing to the boldness and the genius of modern surgeons, has recently acquired new claims to our attention from a therapeutic standpoint.

Etiology.—The causation of malignant, renal disease has been but imperfectly elucidated by clinical investigation. That it may be congenital, seems likely from Dr. Williams's case of myo-sarcoma of the kidney, reported in the Transactions of the Pathological Society of London for 1881. The irritation of calculi appears in some instances to have been the starting-point of, or to have roused into activity a hitherto latent tendency to the disease. In the *Transactions of the Pathological Society of London*, for 1881–82, Coupland reported a case of medullary cancer of the kidney, associated with calculi, and another similar case appeared in the same volume, reported by N. Moore. It is also not improbable that a wider experience will show a certain relation to exist between the condition known as floating kidney, and malignant disease of this organ. Such association was recently observed by Dr. R. Wernacke,[4] of Buenos Ayres. In the London *Lancet* for 1885, Dr. J. B. Pollard recorded a case of carcinoma and dilatation of the kidney from which he had removed a large number of calculi during life.

Age exerts a powerful influence here, as in malignant diseases elsewhere. Although histological considerations are purposely avoided in this paper, it may be stated in passing that sarcoma of the kidney is more frequently encountered in children. Yet primary sarcoma is very rare in the kidney as well as in other glands. J. Bokai, of Buda Pesth, recorded in 1884 the case of a boy only 1½ years old with sarcoma of the kidneys. In 1883, Dr. Alloway published in the Philadelphia *Medical News* the case of a sarcoma of the kidney in a child. But this is not always the form met with in childhood, as shown by J. J. Topliff's case of encephaloid of the kidney in a boy 7½ years old. (*Denver Medical Times*, 1884.)

External violence certainly seems to exert some

[1] Read in the Section on Practical Medicine at the Thirty-Seventh Annual Meeting of the American Medical Association.

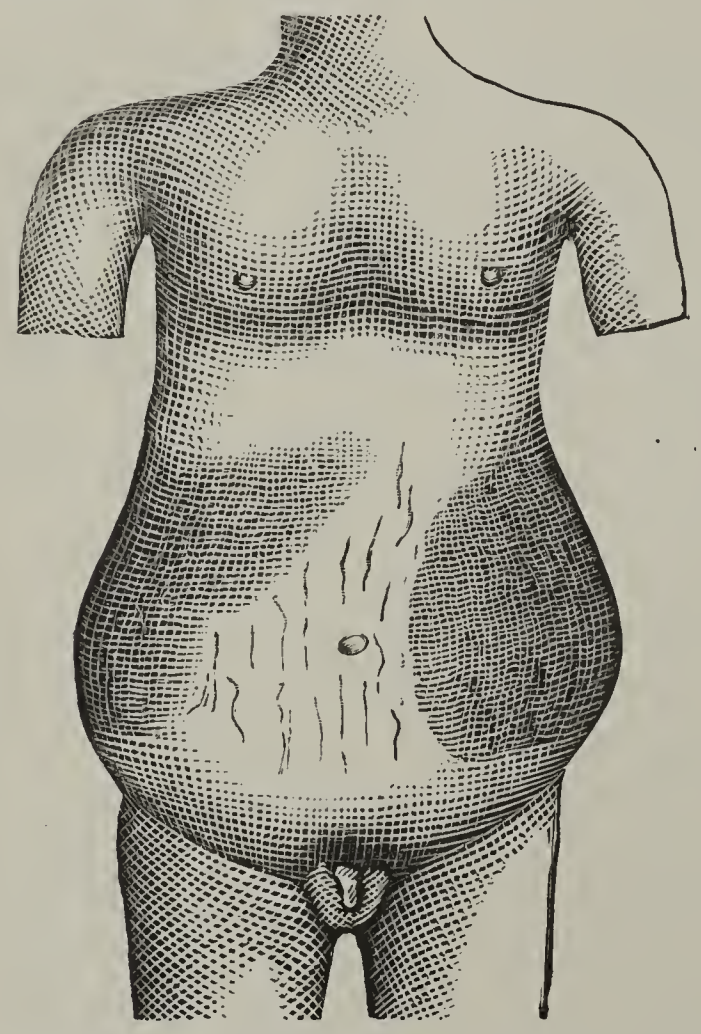
[1] Valleix. Guide du Médicin Praticien. Paris, 1853.

[2] Roberts. Urinary and Renal Diseases, p. 516.

[3] Rayer. Traité des Maladie des Reins. Paris, 1841.

[4] Renon Flotante Canceroso an de Cer. Med. Arg. Buenos Ayres, 1883–84.

influence in the production of malignant disease of the kidneys. It is impossible as yet to decide in what manner, or degree, blows upon the abdomen, or falls, or other injuries exert this power. Brinton, Manzolini, Jerzykowsky and Chomel report cases illustrative of this point, and I have myself observed a case in which a fall was followed within three months by phenomena culminating in well-defined, malignant renal disease. An interesting fact in this connection is that in some of the cases reported the malignant disease did not manifest itself until years after the injury had been received.



Primary cancer of left kidney, secondary implication of the right kidney, and ascites.

Case 1.—Primary cancer of left kidney, secondary implication of liver and right kidney, and ascites.

Willie Lairing, aged 6 years and 9 months, was brought to me on the 7th of October, 1883. Two years ago he had measles, but not very severely, and sometime before he had whooping cough, which lasted two months. He had completely recovered when attacked with measles. About a year ago he had a fall, and his side struck against a large stone. He complained at the time, and cried from pain for a day or two. Nothing more was remarked except that his mother thought that he had fever now and then. Nine weeks prior to his visit to me his mother noticed a lump in his left side. It was hard and not tender under pressure. During the last winter he passed bloody urine for several days; hæmaturia returned in the Spring, and again a few days before his coming to see me. About three months ago he began to complain of pain at the pit of the stomach, generally more in the morning, but has been free from it for several days. He has lost flesh; appetite bad, but is now improved; bowels were constipated until recently, when, as a result of medicine they have acted regularly. He sleeps well.

Present Condition.—Rather sallow and thin, but not markedly anæmic. The tongue clean; pulse 90; respiration 20; temperature 99 Fahr. The liver is enlarged and somewhat nodulated. In the left iliac and hypochondriac region there is a hard nodulated tumor, which descends to the iliac crest; anteriorly it reaches nearly but not quite to the median line. It is immovable and does not descend with the diaphragm. On the outer and posterior aspect of the tumor, is a rather soft and oval prominence, which is probably the spleen somewhat displaced, and compressed between the tumor and the abdominal wall. There is moderate ascites, and numerous enlarged superficial veins coursing over the abdomen. The right kidney is also enlarged.

Heredity, which figures so conspicuously in the etiology of cancer in general, seems to be without influence in developing cancer in the kidney. I have only found a single case in which hereditary tendency to cancer could be traced. This occurred in a patient aged 45 years, whose mother had died of cancer of the stomach. (Case of Malignant Tumor of the Kidneys. Dr. John C. Thorowgood, *Med. Times and Gazette*, Nov. 7, 1868.)

Sex appears to have a marked influence, as the great majority of cases have occurred in males.

Symptoms.—A study of the cases which have come under my own observation, and analysis of those which have been published, have convinced me that a classification of renal cancer upon a natural and clinical basis is rather difficult. The simplest and most practical division would perhaps be into regular, irregular and latent.[5] It is true some cases which have been described as latent were characterized by tumor, as in the patient of E. Gaucher. (*Bull. Soc. Anat. de Paris*, 1882.) The kidney was the seat of encephaloid, had reached double the normal size of the organ, and was never made out during life. There was a general cancerous infiltration of the peritoneum, abdominal pain, digestive derangement, frequent vomiting, alternating diarrhœa and constipation, and rapid emaciation. Nevertheless, it must be admitted that an undoubted carcinoma of the kidney may run its course to a fatal issue, without revealing its presence by pain, tumor, hæmaturia, or any other urinary disturbance. An acute diagnostician may suspect internal malignant disease, but without finding any facts to indicate its site. Such an instance is related by M. F. Colleville (*Bull. Soc. Anat.*, Jan., 1883), and is the only case, I believe, on record which can properly be called *latent.*

For practical purposes, then, renal cancer may be said to present itself under two forms:

First. The regular or typical form, which, as in other diseases, embraces the smaller proportion of cases.

Second. The irregular form, constituting the greatest number, but the irregularities, or deviations from the regular type, are manifold and varied.

It would be both interesting and profitable to undertake a subdivision of this class, were the reported cases in sufficient number; but this must be reserved for the future and probably for some other person than myself.

[5] Patino Luna, Formes Clinicales du Cancer Rénal, 1884.

Even in a typical case the access of the disease is insidious. This is especially the rule where it runs a protracted course; but, on the contrary, where rapid in its progress, the development is characterized by a certain degree of acuteness. Roberts mentions ten weeks as the minimum duration observed; and Ebstein found that the period during which objective symptoms could be observed was only five weeks.

Pain is usually the first symptom in point of time; not easily described by the patient, not localized, but radiating. It may be continuous, or occur in more or less severe and protracted paroxysms. As the morbid growth increases in size, exerts pressure upon, and contracts adhesions to neighboring organs, neuralgic pains may be caused, which are more properly regarded as complications than symptoms of the renal disease.

Hæmaturia is often enough the earliest indication that anything is amiss. It may continue for a long period, but is more frequently intermittent, and recurs again and again at irregular intervals, often enough so profuse as to be alarming, and certainly may prove a cause of exhaustion. It may in other cases be so slight as to require the aid of the microscope for its detection. In some instances this symptom comes on quite late, as in the case reported by Townsend,[6] where it preceded death by only three days. The loss of blood is painless, and in this it differs from the bloody urine of renal colic.

The urine usually presents nothing abnormal, save while hæmaturia is present, when albumen, clots and blood casts are likely to be found in it.

The development of nephritis is attended with urinary changes which are indications of this complication rather than the original disease.

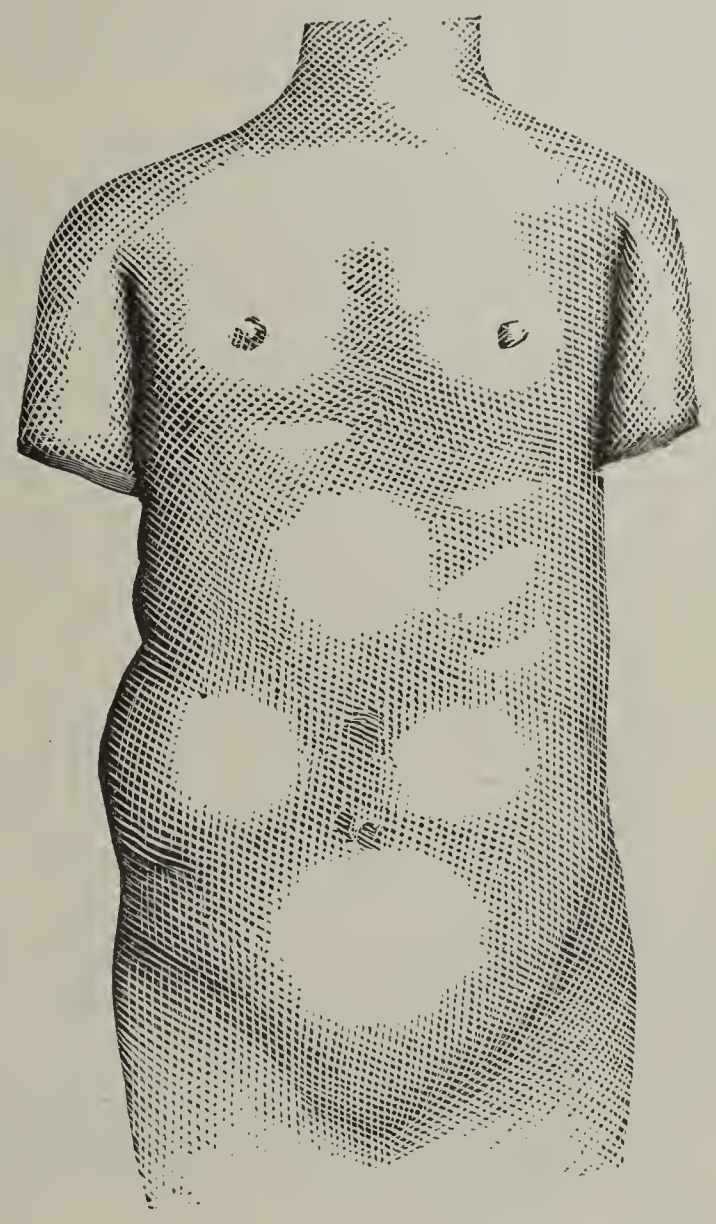
In the earliest stage tumor has not yet been formed; a little later it may still be too small to be detected. But sooner or later it generally becomes accessible and possessed of certain characteristics. In the vast majority it is unilateral, having its centre opposite the lumbar region, between the costal arch and the iliac crest. It does not descend with the diaphragm. It is sometimes perfectly smooth and uniform, but more frequently irregular, and nodulated, hard and fixed. Occasionally some parts of it are hard and others soft.

I am under obligations to my friend, Dr. Ewing Marshall, of Louisville, Ky., for the notes of a case of cancer of the right kidney in a boy 15 years of age, in which the tumor filled the abdominal cavity, and presented a uniformly smooth fluctuating surface. On aspiration a pint of purely sanguineous fluid was withdrawn.

The growth may attain huge proportions, as in the case of Roberts in which it weighed over twenty-five pounds. The abdomen becomes proportionately distended. The lower ribs become spread out and increase the general deformity.

The appetite varies, but is generally impaired. The bowels, often enough compressed, are persistently constipated, but sometimes irritation is set up: there is alternately diarrhœa and constipation, and sometimes mucus and bloody discharges. Emaciation may be very gradual, but is apt to be steady, and periods of temporary arrest are very rare. It may become extreme.

The temperature, according to my own observations, was somewhat above the normal, but others (Fagge) have found it either normal or somewhat lower.



Case 2.—Albert B., aged 34 years, born in Ireland, served as a soldier in the army from 1869 to 1874; a carpenter, married, temperate, consulted me on the 6th of June, 1884. Ten years before he had several ulcers of the penis, with suppurating buboes in the groin, but no constitutional symptoms have ever ensued. Nine years ago he had ague which lasted three or four weeks, and he has never been quite well since that time. Seven or eight months after this last illness he first noticed that something was growing in his right side, which has remained ever since, and has increased in size, and becomes the seat of pain, when he assumes an erect position or lies on the side.

Present Condition.—Patient's height 5 feet 9½ inches. Eight months ago his weight was 148 pounds, and he thinks he has not lost since then. Pulse 94, respiration 18, temperature 99¼° Fahr., appetite good. He sometimes swells up after eating, and suffers a good deal from flatulence. The bowels are loose, and sometimes move ten or fifteen times in the twenty-four hours. The passages are thin, small, and contain mucus pus and blood, and are accompanied with tenesmus. No hæmaturia has been observed, nor anything abnormal with the urine.

On percussion the area of dulness on the liver

[6] Dublin Quarterly Journal, 1868.

and spleen were found normal. A tumor was found occupying the right flank, extending from very near the inferior border of the liver, and separated from the latter by an appreciable space, it appeared to occupy the site of the right kidney; but far exceeded the normal limit, descending below the crest of the ilium, and anteriorly approaching very close to the median line. It is hard, not remarkably tender, movable, but to the same extent as a floating kidney. The anterior edge smooth and somewhat like the spleen.

The patient's statement about the history of his disease can not be taken with perfect reliance, especially as to date when he first noticed the abdominal enlargement. Yet it must have existed several years. In spite of this fact and the comparatively little pain, and failure to establish that hæmaturia had ever occurred, no other diagnosis than malignant tumor of the right kidney seems to be warranted.

The circulation is necessarily impeded. Œdema of the lower extremities and ascites set in especially towards the close. The pulse varies, but is generally somewhat accelerated, though it may be abnormally slow.

The presence of a bellows murmur over the tumor has been observed, and is probably due either to excessive vascularity of its structure or to arterial compression. Its existence must not be lightly attributed to an aneurism, and the difficulties in the way of a correct interpretation of this symptom may indeed be very great, as shown by Dr. Holmes's case of pulsating cancer of the kidney (London *Lancet*, May 31, 1885).

Respiration may become difficult, especially near the close. Anæmia soon sets in and becomes extreme. Weakness, cachexia and emaciation mark the last stage, and the scene usually closes with death by asthenia.

The Irregular Form.—In this the symptoms are subject to infinite variation, but all the cases have one thing in common, viz.: more or less marked deviation from the type already described. In some there is entire absence of pain, either spontaneous or under pressure. In others hæmaturia never occurs, no matter how well-defined the tumor may be. In other cases hæmaturia is accompanied by severe paroxysms of pain resembling nephritic colic, as observed by Bence-Jones (*Trans. Path. Soc. Lond.*, 1875). Again, death has been known to occur without any appreciable tumor having developed during the whole course of the disease.

Complications.—These are not only numerous and varied, but often of such nature as to obscure and render difficult a diagnosis. The renal tumor sometimes compresses the bowel, so as to give rise to obstinate constipation. Pressure upon the duodenum may cause troublesome and obstinate nausea, and in a case published by Rayer perforation of the duodenum had ensued.

Pressure by an enlarged right kidney may produce jaundice by compression, and more or less complete occlusion of the biliary ducts. A case was reported in Gerhard's "Handbuch der Kinder-Krankheiten," and is quoted by Patino Luna, in which cancer of the right kidney was followed by occlusion of the common bile duct, and resulted in chronic jaundice.

Ascites rarely occurs, but it was present in one of my own cases. If considerable, it may prevent a correct diagnosis. This happened in a case quoted by Luna,[7] in which the peritoneal effusion was almost the only symptom, and a cancer of the left kidney was not recognized until after the patient's death.

In a case observed by Mr. Cornil, and recorded in the memoirs of the Paris Academy of Medicine, 1865–66, cancer of the left kidney had produced complete paraplegia, with anæsthesia, and abolition of reflex movements.

Abele reported a case of renal cancer in which adhesion to the abdominal wall was followed by perforation through which a loop of intestine protruded. (Schmidt's Jahrbüch, T. V., p. 379, 1836.)

Radiating pains in the course of the intercostal, lumbar, crural and sciatic nerves are mentioned as not rare in renal cancer, and are explained by direct or indirect compression by the renal tumor upon the nerve trunks.

Inflammation, not only of the cancerous kidney, but of its fellow, has frequently been observed. And pyelitis and inflammation of the ureters have also been known as complications.

The supervention of intense peritonitis has been noted, due either to the irritating presence of the neoplasm, or to hæmorrhage into the peritoneum. Dr. Armand Siredey has recorded the history of a woman 53 years of age, with carcinoma of the right kidney, and of the brain, in whom hemiplegia supervened some time before death.

Diagnosis.—The published errors in diagnosis with regard to cancer of the kidney, render it more than probable that many others have been committed which have never been discovered or divulged. To enumerate even a few of the mistakes which have been recorded would extend this paper beyond its due limits. Nothing could more forcibly illustrate the difficulties so frequently hedging around a diagnosis of this lesion, nor would I desire a better justification for having invited your attention to the subject.

Among the conditions between which a differentiation of renal cancer must be made, and with which it is known to have been confounded, are, cancer of the stomach. That under certain circumstances renal cancer and cancer of the stomach may present a strange clinical similarity, is demonstrated by the fact that cancer of the stomach has been mistaken for cancer of the kidney (M. Chesnel, Hôsp. Necker, 1884), and that cancer of the kidney has been mistaken for cancer of the stomach (Mallassez, Soc. Anat., Paris, 1870). This error would be most likely to occur when, owing to increased weight and bulk, a gastric cancer drags down the organ so as to place the pylorus considerably nearer the location of the kidneys than is common. The opposite mistake would be possible only where a renal cancer gives rise to excessive nausea and vomiting, so as to obscure the renal, and attract undue attention to the gastric symptoms.

---

[7] Loc. cit.

Attention to the following points will generally establish the differential diagnosis:

CANCER OF STOMACH.	CANCER OF KIDNEY.
1. Vomiting is the rule.	1. Generally absent.
2. Hæmatemesis, especially in the form of 'coffee grounds,' very common.	2. Very rare.
3. Hæmaturia absent.	3. Hæmaturia generally present.
4. Tumor in epigastrium.	4. In one or the other flank.
5. Tumor small.	5. Tumor often large.
6. Tumor movable.	6. Generally fixed.
7. Tumor descends with diaphragm.	7. Does not descend with diaphragm.

Enlargement of spleen and renal cancer have been confounded (Luna). It is, of course, only when the left kidney is involved that such a mistake is likely to be made. The two differ as follows:

ENLARGEMENT OF SPLEEN.	RENAL CANCER.
1. Absence of descending colon in front of tumor.	1. Descending colon may be found in front vertically dividing the tumor in two lateral halves.
2. Border of tumor thin, rigid; smooth, but not rounded.	2. Border often irregular, nodulated, rounded, not thin.
3. Extends upwards under the ribs.	3. Less so.
4. Direction of tumor downwards and inwards.	4. Downwards toward iliac fossa.
5. Very movable.	5. Generally almost or quite Immovable.
6. History of malaria or leucocythemia.	6. Absent.

Hydro-nephrosis and renal cancer also present certain resemblances and dissimilarities, which are brought out in the subjoined table:

RENAL CANCER.	HYDRO-NEPHROSIS.
1. Generally unilateral.	1. Generally unilateral.
2. Tumor hard or irregularly soft.	2. Soft.
3. Rarely, and then imperfectly, fluctuating.	3. Fluctuating.
4. Tumor permanent.	4. Liable to subside suddenly at times, with copious discharge of urine.
5. Tumor often of enormous size.	5. Not so.
6. Tumor generally fixed.	6. Moveable.
7. Does not descend with diaphragm.	7. Descends with diaphragm.
8. Tumor of rapid growth.	8. More slow.
9. Cachexia.	9. Absent.

The differential diagnosis between cystic degeneration and cancer of the kidney is established by attention to the following points:

CYSTIC DEGENERATION.	CANCER.
1. Bilateral.	1. Generally unilateral.
2. Tumor may be large.	2. Tumor attains an enormous size, much larger than is ever reached in cystic degeneration.
3. Tumor movable; it rises and falls with the diaphragm.	3. Tumor stationary, and does not move with diaphragm.
4. Runs a rather slow course.	4. Runs a more rapid course.
5. No cachexia.	5. Cachexia sets in early, and is well marked.

Various uterine and ovarian enlargements have been confounded with renal cancer.

Malherbe (Soc. Anat., 1872) relates a case in which cancer of the kidney was mistaken for a fibrous tumor of the uterus. And Dr. Greenhalgh (St. Barthol. Hosp. Rep., Vol. 85) gives the history of a patient in whom a tumor, supposed to be ovarian, acted as a complication in two pregnancies, and the propriety of removal was about to be entertained when the patient again became pregnant. She died without obvious cause three weeks after delivery at the full term, and the autopsy showed that the supposed ovarian tumor was really the left kidney in a very advanced stage of disease. It weighed twenty-seven pounds three ounces. Pregnancy and renal cancer were mistaken for one another when fœtal diagnosis was not so well understood and practiced as it is now, but at the present such an error could hardly be made or adhered to for any length of time by an intelligent and careful observer.

Besides the case of Lossen, which will be mentioned further on, it happened to Peaslee, of New York, and to Spiegelberg, of Breslau, to make the diagnosis of ovarian tumor, and to open the abdomen, when the disease proved to be renal cancer. Both patients died within three days.

The points involved in the differentiation between the two conditions are:

RENAL CANCER.	OVARIAN TUMOR.
1. Generally unilateral.	1. Generally unilateral.
2. Develops from above.	2. Develops from below.
3. Tumor hard.	3. Soft.
4. Rarely fluctuating.	4. Generally fluctuating.
5. Irregular, nodulated.	5. Generally smooth.
6. Loop of intestines in front of tumor common. Dulness to the outside.	6. Intestines pushed aside, resonance on outside. Dulness central.
7. Aspirat'n brings pure blood and sometimes cancerous material at point of needle.	7. Aspiration brings away characteristic ovarian fluid.

Hepatic and renal tumors have not seldom been confounded. Rayer and Frerichs both mention cases in which renal cancer had been pronounced cancer of the liver. It is true the two may coexist, as was observed in one of my own patients; but as a rule attention to the following points will distinguish them:

Cancer of the liver lies much higher and generally presents an irregular nodulated border running more or less diagonally across the abdomen; the intestines never lie in front of it. Jaundice is common, hæmaturia is rare. In renal cancer the tumor occupies a lower point, rises vertically and not so high; ascending colon generally lies in front of it. There is an appreciable interspace between the margin of the liver and the upper border of the renal tumor. Jaundice is very rare and hæmaturia common.

Many other diseases from which renal cancer is to be diagnosticated can be mentioned only in passing. Hydatids of kidney, perinephritis, psoas-abscess, enlargement of mesenteric glands, abdominal aneurism, ascites, distension of cæcum and ascending colon, etc.

The judicious employment of purgatives to empty

the bowel, the practice of auscultation and percussion, the use of the aspirator and attention to the history of the case, will generally suffice for a correct apprehension of the nature of the disease.

Duration and Course.—The impossibility of ascertaining the period when morbid processes in internal organs first begin, makes it equally impossible to to designate with precision their duration. The insidious development which oftentimes characterizes cancerous disease of the kidney still more increases the difficulty, so far as this latter is concerned.

That renal cancer is in most instances unilateral, may in part account for the fact that it runs a more slow course than malignant disease of any other internal organ.

In children it is more rapid, the average duration in them being about seven or eight months.

In adults the average duration has been estimated at two and a half years, but this period has been so greatly exceeded in well authenticated cases, that one must necessarily maintain a prudent reserve when speaking of the possible duration of this disease in individual patients. Roberts has recorded cases in which the disease lasted four, six and seven years, respectively, and Jaccoud relates a case which did not last less than seven years. In some instances the fatal termination has been reached in five weeks.

Termination.—This, in most cases, takes place by gradual exhaustion from cachexia, or repeated hæmorrhages. Bright mentions a patient in whom death speedily followed rupture of a cancer, with hæmorrhage into the peritoneum. In some instances acute peritonitis has ushered in a fatal result.

Intercurrent inflammation of the kidneys, or of other organs, viz., the lungs, has been the immediate cause of death in some cases.

Secondary cancerous affections of other organs have not seldom determined a fatal issue. A fatal embolism has been induced either by cancerous vegetations, or by simple thrombi in the veins.

Uræmia is a possible, but very rare, mode of termination. Only two instances can be found specifically recorded. The first, by M. Butte, was a latent cancer of the left kidney (*Progrès Méd.*, 1873); the second by M. F. Colleville, carcinoma of the right kidney (*Bulletin Soc. Anat.*, January, 1883).

Treatment.—The medical treatment must, in the absence of any specific remedy, necessarily be limited to the treatment of symptoms, and the administration of palliatives. Yet even in this unpromising field the healing art is not without power to stay the ravages of a destructive disease, and to prolong and ameliorate existence.

In the treatment of malignant renal disease, surgery has achieved some very brilliant, if not always permanent victories. Removal of the kidney has now been performed so often that it must be regarded as an established operation. It is only with reference to its applicability to the relief of malignant disease of the organ that it can be considered in this place. Aside from the dangers incidental to the operation itself, and to the patient's general condition, it must be remembered that, while renal cancer is generally unilateral, yet both kidneys may be involved, even when only one appears to be so. In fact, when both kidneys are affected, one is generally in a much more advanced state of disease than the other. In the *London Medical Gazette*, for February, 1847, is recorded the case of a child, thirteen months old, in whom both kidneys were the seat of encephaloid; the tumors were enormous and filled the abdominal cavity. In one of my own cases both kidneys were involved, though not in the same degree.

It is possible also that the patient may have only one kidney, and that one the seat of malignant disease. Such a case came under the observation of Dr. F. E. Manby, who published the history in the London *Lancet* for 1885. The patient had cancer of the right kidney, and there was congenital absence of the left.

While one kidney is the seat of malignant growth, the other may be otherwise diseased. Under such circumstances, the operation would only precipitate a fatal result.

In many cases the attempts at extirpation of the kidney for malignant disease have been ineffectual, and in others were speedily followed by death, either from shock, or peritonitis, or some other accident. The following cases of extirpation of the kidney for malignant disease are highly illustrative of the scope and merits of the operation. Other cases may have been published, but if so have escaped my attention. In 1877 Mr. Jessop, of Leeds, removed an encephaloid tumor of the kidney from a boy 2½ years old. The little patient made a good recovery, but the disease returned in about eight months, and proved fatal in a few weeks. In 1878 Martin, of Berlin, removed a sarcoma of the kidney weighing 28 ounces, from a woman 53 years of age. She was out of bed on the eighth day, returned to her home on the seventeenth day, and was still alive two years later. In 1879 Lossen, of Heidelberg, performed nephrectomy upon a woman 37 years old, on account of angiosarcoma of the right kidney, which was movable, and the operator mistook it for an ovarian tumor. In six weeks she had entirely recovered, and remained in good health up to eighteen months later. In 1881 Czerny removed a large vascular sarcoma of the kidney from a man 53 years of age. In two months he left the hospital perfectly restored to health. At the time of operation he was cachectic, and suffered from constant nausea.

In 1883 T. Gaillard Thomas published in the *New York Medical Journal*, a case in which there was complete destruction of the kidney from malignant disease, and where he successfully effected a removal of the morbid mass by operation. In 1884, Jas. R. Chadwick, of Boston, extirpated a retro-renal sarcoma by abdominal section. In 1885 R. J. Godlee successfully removed a tumor of the right kidney in an infant by abdominal incision. It is likely that it was malignant, as it recurred after a time, and caused death. (*Trans. Clin. Soc. London*, 1885.)

THE EFFECTS OF CERTAIN PHILOSOPHICAL PRINCIPLES THAT HAVE NOT BEEN NOTICED, IN AID OF THE CIRCULATION OF THE BLOOD.[1]

BY FREDERICK N. HUSTON, M.D.,
OF ROCKLAND, ME.

I assume that the subject of the circulation of the blood is not so well understood in the minds of the best scholars and physiologists, that light from a source that has no great pretensions to study and investigation would not be acceptable. I propose to treat the subject in the light of certain philosophical principles, self-evident facts that need no demonstration from experiment. I need not recapitulate all that is known and believed in relation to the circulation of the blood.

I commence with the subject of *cohesion*. "Blood has greater cohesion than water." This expression is used[2] in reference to the increase of friction caused by the increased area of the walls in the branches of an artery. I claim there is no difference in the cohesion of liquids. Cohesion is a peculiar property of all liquids, whereby they resemble the character of solids when acted upon by excentric forces. Where no body of the nature of air or gas is present in a liquid, or can reach any portion of it, and an excentric force is acting upon it at one point, it will act upon the entire volume of the liquid as it would upon a solid body. This fact is unscientifically illustrated by a yoke of oxen hitched to one end of a log and dragging the whole body. And further, I believe, it opens the way to a new investigation of the forces employed in the circulation of the blood. The venous system of vessels is compared by some writers to a *cone*, with its apex at the heart and its base represented by the periphery of the body. It would be quite as proper to say that its base is connected with that of another *cone* similarly representing the vessels of the arterial system.

Let us suppose for a moment that the excentric force (call it a suction force or any other), at the apex of the first *cone*, be just what is stated by the best physiologists of the day; while the ventricular systole acts like a force-pump at the apex of the second cone. It is no doubt true that friction offers an increasing resistance to the arterial current, as is stated by all writers. In the branches of an artery resistance from friction increases in a ratio with the increased area of their collective walls—the united calibre of the capillaries being 700 times greater than that of the aorta. Considering this increased resistance from friction, in the branches of an artery, while no backward flow takes place from its recoil, philosophy would teach us that the arterial wave could not fall as rapidly as it does in the trunk, unless some other physical force, strong enough to overcome the increased resistance in the branches, were acting at the same instant. Such a force could only act at the apex of the *venous cone*, or at the heart, and produce such effects upon the arterial wave.

It might be supposed that such a force at that point, which some would call a *suction force*, would not only cause the arterial wave to subside suddenly, but produce a fall or collapse of the flaccid walls of the veins at the same instant. This would not be possible. Remembering the law of cohesion, whereby liquids are acted upon in this way, as if they were solids, and recalling what has been stated and is well known of the increased resistance from friction in the multiplying branches of the arterial system, *and applying a rule that should work both ways*,—to the decreasing wall surface or area of the venous cone, it is self-evident and plain that the force at the apex, being the same to the square inch in the collective branches, while the resistance from friction is diminished in the trunks, would produce an intra-vascular pressure throughout the venous system, that would prevent collapse from outside atmospheric pressure. To illustrate this point: Suppose the suction hose of a fire engine were constructed something after the form of the *venous cone*, then, provided that the status were the same as that required for the effect of cohesion (a compact mass of water without the presence of air), the firm stiff walls required by present use to resist outside pressure would not be necessary.

This leads me to say something about cohesion in connection with the so-called suction pump, before continuing my subject. The question is supposed to have been settled by philosophers in favor of atmospheric pressure. If the cylinder of a pump contains a compact mass of liquid (as water) and no air can pass the piston while rising (if that be possible, as it must be in the force pumps of steam engines into which air is purposely admitted), the liquid is raised by cohesion and the force employed. If air be present, or passes the piston while rising (an isolated body of air, large enough to expand and occupy the area of the cylinder at one point), the liquid is raised by the atmospheric pressure, and only to the height that will balance the atmospheric column. The syphon also illustrates the effects or the power of cohesion in raising liquids. If the liquid in the syphon be a compact mass, the force of gravity in the long arm acting through the principle of cohesion, will raise the liquid in the short arm to the height of the apex *and above that which would be supported by atmospheric pressure*. But if there be an air bubble at the apex of the syphon, the liquid will be raised in the short arm by atmospheric pressure, and only so far as the pressure will support it.

Continuing my subject after this digression, I take up the force which I have supposed to act at the apex of the *venous cone*. The conditions about the heart, inside the chest walls, and outside of the body of the lungs must be something like that of a compact mass of liquid in the cylinder of a pump or the pipe of a syphon. There are solids and liquids, but no *free air*. But pressure of air in the cells of the lung might affect those conditions as it would not on the walls of a pump or syphon. The cells of the lung yield to the general expansion of the chest and the pressure of air; but at the same time there is equal air pressure upon the vessels opening into the auricles that there would be upon water entering the

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

[2] Reference Hand-Book of the Medical Sciences, 1885, vol. 1, p. 565.

cylinder of a pump. If a cavity were suddenly formed about the heart (if it were possible), at a time when the auricles were empty, and it were to be filled by the effect of outside air pressure, it seems evident that blood would be forced into the auricles for that purpose, sooner than the expansion of air in the cells of the lung could accomplish it. Besides, the outside air-pressure, through the bronchial tubes, would not be likely to reach distant cells expanding from any other cause than general expansion of the chest; so that if atmospheric pressure were alone employed in filling such a cavity, the pressure upon the vessels and their contents that open into the auricles would meet with no resistance, while the air in the cells would meet the resistance of the cell walls, besides having no power but its expansive force.

While this explanation of atmospheric pressure filling the auricles might seem possible or probable, according to accepted theories, its true value and effect is to show how atmospheric pressure may act on the circulation, while *another power* is doing the principal work. And that power is no less than the *excentric force* of the contracting ventricles—the contents of which during systole are replaced, through the property of cohesion in liquids (or liquids and solids), by those of the auricles during diastole.

Whatever other forces assist or retard this effect of the contracting ventricles, it results entirely from the law of cohesion. I have shown that the conditions inside the chest walls and outside of the body of the lungs, were such as are required for the effect of cohesion—a compact mass of liquids and solids, without the presence of free air. I have also shown the possible and probable effect of atmospheric pressure in producing or preventing diastole of the auricles. I have shown the resistance from friction, less in the venous trunks than in the collective branches; while cohesion is a property of liquids whereby they resemble solids, when acted upon by a excentric force. I therefore make this statement: that while no free air can reach the parts inside the chest walls and outside the body of the lungs, nor the blood in the vessels—especially those of the venous system, *each contraction of the ventricles is a force exerted with the same if not greater effect on the venous circulation, as on the arterial—not through vis-a-tergo, but through cohesion.* The blood in the ventricles is united by the cohesion of the liquids and solids outside with that which flows into the auricles, as if it were one current; *and the same force which expels one from the ventricles, acting by* the law of cohesion produces diastole of the auricles.

The effect of free air in the chest is well known, and the explanation of the great disturbances produced thereby is one of the many instances where Science is diffident of her own powers. How much the expansion of the air in the cells of the lung interferes with the circulation, and at the same time furnishes evidence of the truth of this theory, is shown thus: Let any gentleman present make a strong inspiration, fixing the chest in that state for a half minute—at the same time placing his finger on the radial artery. If he has never noticed the effect before, he will be surprised at the almost immediate weakening of the pulse and perhaps its disappearance, and at its returning strength following expiration. There can be but one explanation of this result. The air cells are not only filled with air, but are fixed in that condition, whereby the effect of expansion continues to increase their capacity at each systole of the ventricles, until they act after the manner of free air in the chest—lessening but not destroying the effect of cohesion in the diastole of the auricles.

I must apologize for not noticing many important facts concerning the circulation of the blood. The time at my disposal and poor health are my excuse. I have to confess great obligations to Dr. Francis E. Hitchcock, of this city, who presents this paper to this Association, for the benefit of his experience and the aid of his friendly interest. I have not been able to assume a scientific nomenclature, such as the dignity of this subject, and this convention of physicians and surgeons have a right to expect.

But before closing I propose to notice a few points of fact and experience. "No explanation of symptoms caused by air in the blood."[1] From what I have noticed in my professional experience, in several instances where I have believed air entered the veins during hypodermic injections (the *modus* of which I will try to explain hereafter), the symptoms and sensations are the same as those experienced in a lesser degree, sometimes, during the act of vomiting when the veins are distended by muscular contractions and the fixed inspiration of the chest.

Let us suppose for a moment the effect of a globule of air (so to speak) entering a vein at the point of a hypodermic injection. Such a body of air would expand in the direction of the heart, by its own force, with that acting upon the blood in the vein, until it occupied the auricle in diastole. This appears actually to take place, from what has been learned by experiment and after death. But it would not take place if the venous blood were impelled through its channels by a *vis-a-tergo*, or muscular contraction, or by outside atmospheric pressure. The air globule would be compressed by any or all of these forces, instead of expanding into a thousand air bubbles, filling the cavities of the heart. The effect of air thus entering the vein is realized in the symptoms. The auricle is too quickly filled with rarefied air mixed with blood, in the form of air bubbles. The contracting auricle closes the superior valves, and if no air bubbles find their way into the superior vessels, intra-vascular pressure must be suddenly increased in them from other causes. The loss of cohesion by the entrance of air would take away that power, which not only aids circulation, but counteracts the effect of gravity upon the inferior vessels.

Whatever may be the effect of valves in the inferior veins, toward relieving gravity in the lower vessels, it must be remembered there is another column of blood, without valves, pressing downward with all the force of gravity, as well as that of the arterial wave. If these lower vessels, whether arteries, capillaries or veins, were compelled to sustain such a pressure it is easy to see what the effect would be.

---

[1] Reference Handbook of Medical Sciences.

But fortunately, the force which acts throughout the venous cone, in the direction of the heart, reaching even the arterial wave, so far unloads the inferior vessels, that the effect of gravity during the interval this force is at rest, can do no more than fill these vessels to a normal tension.

I will now explain what I believe the *modus* of air entering a vein during hypodermic injection. Some years ago I attended a patient to whom I administered hypodermic injections of morphia several times a day, for two or three weeks, during an interval of more than three years. I noticed the symptoms of air entering the circulation a considerable number of times, when the unusual bleeding that invariably occurred convinced me that I had punctured a vein. Making the injections very slowly, I believed I avoided those unpleasant effects, so that they did not occur as frequently as before. Within the past year I have attended a similar case, and have often noticed similar effects, when I have believed that I had punctured a vein. During the past four months, I have tried the expedient of making the injection while the patient held his chest at full inspiration—making the injection slowly as before—and in more than 300 injections of the contents of a full syringe, have not once noticed the unpleasant effects, that I have known to occur twice on the same day previonsly when I had used great care to avoid them. I do not claim this statement as authority until further trial.

The explanation I offer for employing this expedient is the following: I believed that when the air cells were fixed in inspiration, their contents would expand, and after the manner of free air in the chest, would weaken the excentric force exerted upon the venous cone, as it has been seen they do the concentric force, or pulse wave exerted upon the arteries; and hence there would not be so great a force to induce the entering of air into a punctured vein.

I will next try to show how I believe air may enter the circulation during a hypodermic injection. The fact that it does, while the syringe contains no air, cannot be denied, or at least the symptoms, that cannot be explained by a llquid entering the vein. Suppose that a vein has been punctured by the needle, and the connective tissue about it is firm and unyielding. Suppose the injection to be made rapidly, so that the skin is distended and dilated around the needle—then if the force of the contracting ventricle is acting through the principle of cohesion upon the contents of the punctured vein, it is not difficult to understand how air (in very small bulk, fortunately) may be sucked in, as it is usually expressed, through the slightly dilated tissue about the needle, as has happened in wounds and venesection at the neck.

While the skin is sustained by the liquid injected beneath it, and the walls of the vein sustained by intra-vascular pressure, as they are until cohesion is destroyed, the puncture made by the needle through these tissues is analogous to one made through the cylinder-wall of a pump.

The limits of this paper allow but a brief notice of the subject of venesection. Suppose a vein in the arm is to be opened, and a ligature has been applied in the usual manner. The force acting upon the venous system through cohesion is not lessened in the veins below the ligature, although the current or flow is diminished at that point. It is owing to these conditions that the veins below become greatly distended, receiving more blood than the ligature above will permit to flow through the narrowed lumen of their trunks. These veins are distended, not suddenly, as from loss of cohesion and the effect of gravity, but slowly; hence the sensations and symptoms are of correspondingly mild effect. Suppose the vein to be opened. The valves in the collateral vessels will be closed at each systole of the ventricle and corresponding diastole of the auricle. They open during the systole of the auricle, through the effect of intravascular pressure; and the regular flow of blood at the opening is due to the contractile force of the distended vessels, that receive their supply, at successive intervals, from the choked and over-filled veins of the collateral circulation. This explanation may not seem clear without illustration, but I believe it will bear the test of philosophical criticism.

If the ligature be removed before the opening is closed, the vein above is quickly emptied of its contents by excentric force and cohesion of the blood, and is closed to the entrance of air below, by outside air pressure. But, unfortunately, this result is not always prevented by outside air pressure, as in those cases where air has entered an opening at the jugular. It may have occurred oftener in amputations than it has, but for the fact that the heart's action is greatly weakened by the shock of operation.

I will close with a brief notice of the sounds and impulse of the heart. If an *excentric force* is acting upon the venous cone, as I have described it, the blood must enter the auricles (especially the right) with some force of *momentum*. We are all familiar with the sound and shock produced by the momentum of water in a pipe, when the cock has been suddenly turned, and the stream shut off. The sound is suggestive of the first sound of the heart; and the thrill and jar received by the pipe is suggestive of that received by the chest, when the heart is in violent action. The two sounds are different and distinctive; and yet there is a similarity, as if they proceeded from a similar cause. I believe, then, that the momentum of the blood, as it fills the auricles (especially the right), and while its current is stopped for an instant, furnishes the first sound of the heart, as well as the impulse that may be felt at different parts of the chest, according to the position of the body, in some cases of enlargement of the heart. Probably I shall not find any to disagree with me, when I say that I believe the second sound proceeds from the momentum backward of the arterial blood, due to the recoil of the arteries and the closure of the valves at the heart. It is no backward flow of the arterial blood (in a strict sense) which causes a backward momentum; but the recoiling arteries, that shorten during the systole, lengthen during their recoil. This would produce a slight shock of momentum and a sound similar to the first, shorter and in a different key.

TREATMENT OF CONSTIPATION.[1]

BY HENRY M. FIELD, M.D.,

OF BOSTON, MASS.

The physiological resources—or, better still, the resources answering to physiological indication—which the physician has at his command for the relief and cure of chronic constipation, may, for purposes of analysis and classification, be referred to three subdivisions.

First.—Chronic constipation is quite often habitual constipation, and is to be most effectually combatted by habitual and systematic attention to the demands of nature in a periodic evacuation of the bowels. Success along this line involves exceptional intelligence, and resolution, and confidence, on the part of the patient. The poet Cowper has well expressed the difference of task in the formation of a habit and reformation in the stanza—

> "Habits are soon assumed; but when we strive
> To strip them, 'tis being flayed alive!"

It is far easier to swallow an occasional or a frequent pill than it is to adopt the system required for the removal of a bad habit in respect of constipation; and the patient, whose interest and confidence can be enlisted at first, too often loses faith in herself or the system, and, indeed, in the doctor. The young woman who has been so badly trained in her maternal home—and cases of this kind, throughout our best families even, are innumerable—that she has no other notion of the natural functions of the bowels than that response is to be made only to an emphatic call, an experience which may happen once in three or four days, or once a week, or less often, and who receives as a new revelation the statement of her physician that there should be alvine evacuation daily, *at a regular hour*, and the most rigid system observed in this particular, has no light occupation before her in an effort to inaugurate reform after so many years of inattention and irregularity. But such task has been repeatedly accomplished upon the condition of a fairly good constitution, of certain measures chiefly dietetic and hygienic of help, and of determined perseverence; and constipation thus cured is effectually and permanently cured.

The patient is to be instructed to select that hour of the day best in consonance with previous habits and least liable to interruption,[2] and invariably, as the hour comes round, to make an effort at stool, even though there be no solicitation and notwithstanding there should be frequent insuccess. So inevitably is man the creature of habit in every realm of his being, that the patient who invariably and resolutely attempts to perform any physiological function at a stated hour every day, will very surely, after a time, carry out his purpose; and the more especially in the present instance if he have every assistance from a carefully adapted regimen. Of course, any physiological law whatever must have intelligent interpretation; and allowance must be made for occasional departure from the usual standard. There are patients who have excellent health upon the basis of a regular movement of the bowels once in forty-eight hours; and my preceptor, Dr. Peaslee, used to report the case, observed in one of his families, where both husband and wife, then arrived at old age, had each been accustomed for many years, if not through life, to evacuate the bowels only once in nine days! It is the principle of regularity that is to be insisted upon; and a single occasion of failure or neglect, in an individual whose bad habit of constipation had been largely corrected, may cause a serious relapse into the old and depraved method, or lack of method, of life.

Details can hardly be expected from a paper which is confessedly but fragmentary and suggestive; it is to be understood that the *regimen* which is to assist the patient in the formation of a new habit, shall receive the largest construction and be the object of a special application in every case. Whatever best offers assistance, whether from the department of hygiene or dietetics, is to be laid under contribution. Such appliances as the electric battery, the electric belt, localized massage, kneading of the bowels, etc., have a high and, indeed, an essential value in some instances.

But all cases of habitual constipation, as already intimated, are not susceptible of cure by the scheme of the formation of a new and correct habit; and this for various reasons; probably those cured and capable of cure, at least as found in adult life, are quite exceptional. The patient cannot and will not persevere in the necessary effort; the bowels, long inused to overdistension and torpor, will not respond to the most positive of alimentive stimuli; help must be had from medicine, and this medicine drawn from the class of cathartics. What is a cathartic? I have frequently found occasion to say that the definition of anything pertaining to special therapeutics must squarely meet three conditions, if it is to be depended upon to convey the requisite information: It must be intelligible and concise and comprehensive. Judged by such standard, I know not where in any of all the books devoted to therapeutics, we shall find a satisfactory definition of cathartic. Fothergill approaches the requirement of the case, and yet his terms are not quite free from fault. The following, therefore, is proposed for approval or criticism: A cathartic is an agent or agency which increases both peristalsis and intestinal secretion—either element of action, ordinarily, being prominent according to the material used—with result of provoking preternaturally free and frequent evacuation of the bowels.

There is no need to remind you of recent physiological experiments which have established the fact that every agent which acts cathartically, even though the influence be of that mild degree recognized as laxative, does so by procuring both hypersecutive and increase of contractility. One agent acts chiefly on the glandular structure and the stools will be watery; another acts mostly through energized per-

[1] Read before the Gynæcological Society of Boston, May 20, 1886.

[2] NOTE.—*The hour best in consonance with previous habits, etc.* Not necessarily at early morning hour, although such is doubtless the hour observed by the majority of those who have established a habit of regularity. A short-sighted effect to force a particular hour upon a patient, who had individual reasons for the selection of some other period of the day, has been sufficient to bring discouragement and failure in some instances known to the writer.

istalsis, and the dejections are feculent, as with Epsom salts in the former case, and senna and aloes in the latter. There is one purgative, and perhaps only one, catharsis from which appears to present equivalent of action, viz., castor oil; a consideration which, together with the conjoined fact of nearly equable distribution of influence throughout the entire intestinal tract, renders this offensive medicament too often essential to the physician. With an occasional laxative in an occasional subject, energized contractility may be so little pronounced that the serous effusion evoked may remain in the bowel—unless reabsorbed—until some peristaltic is administered to procure its evacuation. But none the less is it true physiologically that the two elements specified always inhere to cathartic medication, and, in variable degrees, are always present in the operation of a cathartic remedy; and the recognition of this principle is essential to the successful employment of this class of materials.

Again, cathartics vary materially in their action regionally considered; *e. g.*, senna acts chiefly on the small intestines and aloes on the lower bowel. Some, like jalap, and especially elaterium, act so high up as, frequently, to involve the stomach in the irritation produced and occasion nausea, and even vomiting. It should be borne in mind that the selection of a cathartic, with respect of its operation cathartically upon the small or the large bowels, must have a very important bearing upon the alimentation and nutrition of the patient; for a cathartic which acts energetically upon the upper bowel and so sweeps it of nutritive material upon which the energies of digestion have been already expended, and which is *in situ* and in process of and for assimilation, depresses the patient far more seriously than does the emetic, which simply evacuates the stomach of undigested or indigestible food; while, *per contra*, the other purgative, which gives its force only to the larger bowel, can bring away little more than residual and excrementitious matter.

Still another fact must receive the attention of the physician who expects to employ a cathartic safely and effectively. Some purgative materials exert an influence, near or remote as concerns other organs, of which it is not practicable to take account in any definition of catharsis. In addition to modified action in the function of muscular and glandular structures, rhubarb and magnesia, prominently, effect important changes in the morbid condition of the mucosa of the intestine; and the fact that mercury is indicated in certain functional disturbances of the liver, and that aloes is contraindicated in morbid lesion of the rectum and uterus—familiar to every physician—are sufficient illustrations of the principle which we would emphasize.

Each subject of chronic constipation, requiring help from cathartic medication, must be regarded as a special problem, and, as it were, to be carefully solved before effectual aid can be afforded. An attempt to apply the methods of a routine practice will quite surely bring disaster or disappointment. The physiological characteristics of the prominent cathartics being already understood, it is now to be determined what are the individual peculiarities of the patient who presents himself for treatment. Is the constipation to be traced to inertia of muscle? and is this located chiefly in the large or small bowel? Or, again, is the prominent defect referable to a generally defective secretion from the glandular apparatus, or perhaps the entire canal? If it is that great gland, the liver, without the normal working of which no important task of either stomach or bowels can be healthily performed, if it is the liver that is at fault, it should go without the saying that no therapeutic measures directed against constipation can be really remedial which do not ensure the return of the bile, in proper quantity and quality, to the intestine. The researches of Rutherford, in particular, among recent physiologists, have provided us with new materials for service in this direction; but all the negative conclusions of all the physiologists from the time of Bennett have not availed to release the clinical physician from primary, if not inevitable, dependence upon mercury, in all conditions which unmistakably indicate recourse to a cholagogue.

If it is a weak and anæmic woman, whose symptoms point to torpor located in the small intestine, it will be a difficult task so to adjust medication as to restore activity, procure systematic evacuation and yet not seriously to deplete. On the other hand, the individual who habitually over-eats and who is consequently plethoric and perhaps bilious and constipated, will, in addition to a timely mercurial, find an admirable resource in the frequent use of the mildly saline cathartic waters, such as hunyadi, etc., so popular now-a-days; popular, doubtless, because their special rôle has come to be so generally recognized by the large class requiring such intervention. At the same time, it may be questioned whether the practice of the Roman epicure, in the employment of the emetic, as Seneca gives it—"They vomited that they might eat, and they eat that they might vomit," was not more physiological, as it was surely more direct in its purpose and results.

Probably no one material belonging strictly to the class of purgatives is so valuably to the physician, in the treatment of chronic constipation, as is nux vomica, classified elsewhere; and because whatever other element may be present, a deficient tonicity is quite sure to complicate the worst cases of this affection. Nux vomica is the great neurotic energizer of digestion; it is to the nervous element in digestion what pepsin is as a catalytic, and it is the great peristaltic. Many cases can be successfully treated without help of other medicine than nux vom., through dependence upon the measures specified in the first section of this paper. Still further, the consideration that nux vom. has much of the stomachic properties of the simple bitter, combined with the component power of quinia, renders it the more valuable in such application. Again, nux vom. is valuable because the energy for specifically peristaltic cathartic is much enhanced by its combination; so that, *e. g.*, the fraction of a grain of aloes may prove as effective in union with nux vom. as would a large integral dose of aloes alone.

Once more, the elimination, by the pharmaceutical

chemist, of the active principles of aloes is a fact of much importance in the treatment of habitual constipation; so far, at least, as aloetics are applicable. Thereby much greater concentration is secured, and not this alone, but the essential oil, which is largely responsible for the nauseous smell and taste of aloes, is avoided, and it is no longer obligatory upon the physician, in his offer of a purgative, to present a bulky and offensive medicament. A parvule constituted of aloin and nux vomica, aa gr. ⅓; or of aloin, gr. ⅓, strychnia sulphate, gr. $\frac{1}{30}$, with addition of gr. i ex j hyoscyamus, to be taken after meals once or thrice daily *pr. r. n.*, provides a resource more generally appropriate than perhaps any other that can be devised.

But aloetics have a wide and varied range of contraindication; it is pretty surely true, notwithstanding the assertion of some authorities to the contrary, that habitual dependence upon the smallest dose of aloes will gravely increase any active disease of either rectum or uterus. For the subject of chronic constipation, with complicating hæmorrhoids or metrorrhagia, or uterine inflammation, it is a difficult thing to find a substitute for the aloetic pill. But the introduction of cascara sagrada has rendered the task easier, and a pill made of nux vom. with gr. i–ij ext. cascara sagrada will sometimes meet the latter indication admirably.

It is an accepted statement with the therapeutic physiologist that physostigma increases secretion along the course of the alimentary canal; and physiologically considered, there should be provided a mild laxative in a combination of nux vomica and physostigma, as setting in active operation the two essential factors of a cathartic influence. At all events, physostigma introduced into the aperient pill should meet a corresponding indication, as respects the glandular structure of the bowel, with nux vom. in its action upon the muscular coat. From my own limited clinical experience with the former remedy, I have failed thus far to be satisfied of this fact, but in the subject of chronic constipation with prevalently dry dejections, it would receive the sanction of the authorities to combine a fraction of a grain of physostigma with the ingredient of the aperient pill.

Finally, idiosyncrasy is the occasion of much concern in the systematic and habitual use of cathartic remedies;—it is doubtful if individual peculiarities assert themselves more arbitrarily in reference to neurotic remedies than in such employment of cathartics. If the patient is a female, and especially if she has been long pampered by habits of self-indulgence and luxurious living, the case must be very carefully studied upon its own merits and demerits, or the physician will quite surely go wrong. The selection of remedies having been made and their apportionment decided upon, it is well that the patient should understand that no two cases of constipation ever required exactly the same treatment, and that quite likely there must be repeated trial and modification of the measure proposed and report to the physician before an exact adaptation can be made in the present instance. Large experience does not always bring confidence; a large experience in the treatment of chronic constipation rather brings distrust, *i. e.*, to the physician; and it is right that the patient should, at the start, be imbued with a measure of this distrust and acquainted with the reasons for it, alike in justice to the doctor, the system and himself. Many patients will not meet the inevitable conditions—they soon get discouraged or are satisfied with partial results; but when the physician can secure such cooperation, it is assuredly alone his fault if the treatment is not at last reduced to successful terms.

There are, however, some general facts in the employment of special cathartic materials, of which the following must serve as illustrations; and the more of such the practitioner may have at command the less often will he commit a deplorable error:

1. The salines do not commonly agree with the aged—they find them too chilling; and a dose of Epsom salts, which may operate very kindly upon the young and middle-aged and vigorous, may bring serious disaster to the old man or old woman. A sudden depression of vital energy and the function of calorification thus procured, together with other favoring circumstances, have more than once precipitated the subject into a fatal pneumonia.

2. All cathartics are apt to be attended with colicy complications when given to a woman at the epoch of menopause; and especial combination at such time, as with comminatives, should be directed against this painful action. Some of the text-books or lectures used to report the case of a young doctor who was dismissed with contumely from a prominent family, upon which he had chiefly depended for the advance of his fortune, because, of offense given to the alimentary canal of a matron, through neglect of this precaution.

3. The common domestic cathartic, senna, should never be prescribed to the subject of cumulative constipation or of impacted fæces; if there be anything answerable to a fæcal plug formed in the course of the small intestine or near the valve, on either side, such a peristaltic cathartic as senna will infallibly occasion serious and even alarming colic before evacuation can be accomplished; and the same restriction applies to a similar use of an integral dose as calomel.[1]

4. And to make affirmative provision for the subject of the last restriction, in a case of impacted constipation, when it is to be presumed the bowels are more or less distended with hard, dry, knotty, scyabalous masses (and the more imperatively if there be suspicion of complicating typhlitis or perityphlitis), nothing works so safely and so well as Epsom salts, possibly energized with minute doses of tart. emetic, gr. $\frac{1}{16}$ to $\frac{1}{12}$. Or if it be desirable to apply a cautious peristaltic stimulant in this condition, or in whatever condition declares absence of organic contractility in the bowels, nothing else can be so direct in operation as gr. $\frac{1}{40}$ sulph. strychn., inserted once or twice in the twenty-four hours in the areolar tissue of the abdominal wall.

---

[1] NOTE—An infusion of senna may, however, be administered as enema when the torpor and distension are mainly located in the large bowel, both safely and effectually. The excitant influence of senna over organic muscular fibre of bladder, and uterus also, was perhaps more familiar to physicians of an older school than to those of the present day.

5. There is apparent perplexity in providing cathartic medication, whether on occasions of temporary or habitual constipation, for the subject of a prevalent uterine hæmorrhage—*i. e.*, menorrhagia or metrorrhagia. Of course, aloetics are absolutely contraindicated, and senna and cascara no less absolutely; unless, indeed, in the exceptional instance where such a remedy as ergot is required. But there is a cathartic, or laxative cathartic, which deservedly has the reputation of exerting somewhat of inhibitory influence upon hæmorrhage from the womb, viz.: cream of tartar. It would be hard to name another which, in its action upon the bowels, arouses so little of peristalsis; and it is not possible that cream of tartar, in any degree of action, should stimulate uterine muscles to contraction; while its tendency to reduce temperature, and especially to lower blood pressure, should work favorably for the arrest of hæmorrhage from whatever cause.

The last section of our subject contemplates, if not the cure of habitual constipation, at least an escape from its discomforts and injurious influence upon health, by the systematic use of water-enemata; but its discussion must be postponed for want of time. It may be said, however, in closing, that loose aud erroneous notions prevail to an extent among the profession even, respecting the value and the consequences of this measure of relief. The rectal syringe, like the uterine pessary, may do incalculable mischief; suitably, appropriately, strictly and intelligently controlled, it may be of incalculable benefit. In either instance, there must be selection of cases and considerate adaptation. In no other department of medical practice is the tyro in medicine more out of place, as well as the physician who gives but a passing thought to the condition for which he is called to prescribe.

MEDICAL PROGRESS.

Placenta Prævia.—At the first meeting of the German Gynecological Association Dr. Bayer, of Strassburg read a paper on this subject. Duncan's theory as regards hæmorrhages in placenta prævia was formulated to apply only to the hæmorrhages occurring with the pains and suffices for these alone. Since that time we have learned of the formation of a lower uterine segment. This is not simply the lowest portion of the uterus, but a zone, characterized by quite definite qualities, which does not take part in the contractions, and depends after labor in a condition of extreme relaxation. The hæmorrhages have been brought into connection with the development of this lower segment, and since the latter forms during pregnancy, this apparently explains also the hæmorrhages occurring during gestation. He then compared the various views respecting the origin of the lower uterine segment with the conditions existing in placenta prævia. According to the views of those who look upon the lower segment as a portion of the body of the uterus, the placenta prævia must be partly or wholly inserted into the segment. But this is a physiological impossibility, at least in cases terminating favorably, for owing to the absence of contraction or retraction of the placental site in the lower segment, every parturient with placenta prævia would be hopelessly doomed to death from hæmorrhage. The other view, according to which the lower segment forms from the supravaginal portion, explains the phenomena in a less forced manner. But then the questions arise, why does hæmorrhage not invariably occur during pregnancy and why can the placenta be felt occasionally immediately over the closed cervical canal, or one with opened parallel walls? These objections cannot be explained by saying that the conditions vary in different cases. He concludes from the observation of twenty cases that in placenta prævia similar conditions prevail as in premature labor, that is to say, that in that condition the defective development of the supravaginal portion is a typical phenomenon; that furthermore the internal os occasionally remains closed until the actual commencement of labor, and that in that case no lower segment is formed.

Dr. Bayer distinguishes:

A. Simple low insertion of the placenta, where the margin of the placenta reaches only into the neighborhood of the internal os. Here hæmorrhage occurs only during labor, when a portion of the placenta remains in the area of relaxation, *i. e.*, when the lower segment is not formed normally. Accordingly he found low insertion of the placenta with hæmorrhage during delivery only in premature labors in the eighth or ninth month.

B. True placenta prævia. To constitute this condition, it is necessary that some portion of the placenta at some time covers the internal os. There is only a difference in degree between placenta prævia centralis and lateralis; the former may pass into the latter in the course of pregnancy or not until labor, when the supravaginal portion develops accordingly; inversely, the symptoms of placenta prævia centralis may be present, although only a small lobe projects over the internal os, when the latter did not dilate materially before the examination. As the internal os opens, the placenta inserted upon it must become detached or it must tear; in either case hæmorrhage occurs. If this takes place during pregnancy, provided the latter continues after the first hæmorrhage, we must expect alterations in the placenta. In the cases observed by him, such alterations were constant when hæmorrhage had occurred previous to labor; they were always absent when the first hæmorrhage took place at the outset of true contractions.

He distinguishes:

1. Hæmorrhages during pregnancy; they characterize cases in which the os opens during pregnancy.

a. The placenta remains firmly on its seat, while the portion on the os internum tears; the laceration may extend to the membrana chorii; in this case labor will probably set in soon or the child die from loss of blood. If the internal os opens very gradually, more superficial lesions of the placenta may arise; according to the view of the author, a placenta marginata occasionally forms by the tearing apart of

the placenta, flattening and relatively excessive spreading of the maternal surface. Perhaps such lacerations or tearing apart of the cotyledons over the internal os explain also the cases of placenta succenturiata.

b. When the internal os opens, the smaller lobe of the placenta is loosened; it falls into the lower segment which develops only to a slight degree; it becomes exsanguinated, flattens, atrophies, and detaches itself from its chorionic insertion. This form of placenta, therefore, can be looked upon as a partial placenta marginata. Should the pregnancy continue long enough after the detachment of the smaller lobe, it is possible that a lower segment of normal extent will form subsequently; if the placenta at the same time is situated at the anterior wall, it will possibly be no longer palpable during labor as prævia, and in some cases not give rise to hæmorrhage even during the pains.

2. Hæmorrhages during true contractions. Here Duncan's explanation is valid. The uterus draws itself upwards at the placenta so long as the ovum remains intact. In this way, a larger and larger portion of the placenta appears free; the lobe thus detached looks thick, saturated with blood, bluish-red, and covered with clots. If it was the source of hæmorrhage before or during pregnancy, there are besides corresponding alterations in the placenta. In rarer cases, the internal os remains closed until the onset of labor. Then there is an absence of those changes in the placenta which require time for their development, but there is also an absence of every uterine hæmorrhage during pregnancy, and the course of the labor in such cases is usually more difficult, and more dangerous for mother and child.

a. The unfolding of the cervix during the pains progresses in a normal manner. In such cases the manipulations of the attendant are rendered more or less difficult, and the ordinary cervical lacerations—longitudinal tears through the lower portion of the neck—occur more readily. The first hæmorrhage is then usually of special severity, as Spiegelberg has formerly pointed out.

Of much graver import are the cases in which the still undeveloped supravaginal portion shows a tendency to form a stricture— placenta prævia with stricture. In such cases, the internal os remains comparatively narrow during the pains, while the inferior portions of the cervix dilate in form of an ampulla. The author has met with a similar case in which the parturient lost no blood, not only during pregnancy, but even for two days during labor, although placental tissue was situated all around over the internal os. Immediately after labor, the patient bled to death from a fistulous cervical laceration extending as far as the peritoneum. He proposed the following divisions:

1. Placenta prævia with corresponding development of the supravaginal portion and hæmorrhages during pregnancy and alterations in the placenta. He observed ten cases with hæmorrhages during pregnancy; among these were two cases of placenta marginata totalis, six of partial placenta marginata, two of placenta succenturiata. Eight children were born living, one at six months, one dead. All mothers recovered.

2. Placenta prævia with cervix remaining intact until the onset of true labor; no chronic alterations in the placenta, no uterine hæmorrhages during pregnancy. Aside from three cases of low insertion of the placenta and hæmorrhage with premature labor, he had observed seven cases of placenta prævia without hæmorrhage during pregnancy. In six of these, labor occurred at term. Two children were born living, five dead; one mother died of hæmorrhage immediately after labor, one had a severe attack of parametritis, one required the suturing of the cervix. —*American Journal of Obstetrics*, August, 1886.

SULPHATE OF IRON IN DIARRHŒA.—MR. CHARLES ROTHWELL says in the *British Medical Journal* for July 17, there is a memorandum from Dr. Braithwait, of Leeds, on the treatment of diarrhœa in children by the sulphate of iron. Although I have no experience of its efficacy in children, I can endorse the same in the choleraic diarrhœa of adults. It was during the last real invasion of our country by cholera in 1850, when East London and Gateshead suffered severely, that the valuable suggestion of treatment by the iron sulphate was adopted with success in the larger number of cases of choleraic diarrhœa, if not real cholera, treated here, such cases being diagnosed by blue, cold, wet skin, writhing cramps, and vox choleraica, which, once heard, is never forgotten. It is to be noted that Dr. Braithwaite has omitted mention of what used to be considered the "best bower anchor" in the treatment of all diarrhœas, namely, laudanum, which, if it held, only made the unfortunate vessel swing round upon rocks as dangerous as the storm itself. It is generally known that this ferric salt is, or ought to be, widely used for the disinfection or correction of decomposing fomites of disease in midden heaps, sewers, and the like. Why not use it in the aboriginal and typical sewer *in corpore vili*, in the flushing of which nature uses the most valuable of storm-waters, namely, blood-serum, *plus* albumen, to the destruction of the house that owns it? I would suggest the use of this salt by injection, in cases where persistent vomiting stops the way.

TAKING THE TEMPERATURE IN CHILDREN.—A very ingenious and simple method has been proposed by FILATOFF, in the *Archiv für Kinderheilkunde*, vol. vii, part 3, for expediting the troublesome process of obtaining the temperature in children.

He recommends that by the use of a previously warmed thermometer the fall, and not, as is usual, the rise of the mercury be observed. In from one to two minutes the column is found to stop at a point which very closely approximates to the actual temperature of the patient. It is found that the higher the fever, the smaller is the error. Thus, at temperatures of from 103.1° to 104° F., the error does not exceed 0.2° F., while for lower temperatures it may reach 0.5° F. It is, of course, evident that a certain amount of care and skill is requisite in order that the precursory warming of the thermometer be neither insufficient nor excessive.—*Med. News*, Aug. 28, '85.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, SEPTEMBER 11, 1886.

DIABETIC COMA.

There has been a great deal of unfruitful speculation in regard to the nature and causes of the so-called diabetic coma. It has been applied to a form of coma which occurs late in the disease, and which frequently terminates the affection, and is also used to indicate a train of nervous symptoms of which coma is the terminal one. "To this train of symptoms the word acetonæmia is also applied, and should alone be used," says Tyson, "while the term diabetic coma should be restricted to the terminal symptom." One of the most thorough reviews of this subject that has come out for some time is the Bradshaw Lecture, delivered on August 18, before the Royal College of Physicians of London, by DR. JULIUS DRESCHFELD. The lecture may be found in full in the *British Medical Journal*, of August 21, 1886. "By diabetic coma," he says, "we understand a peculiar train of symptoms coming on, more or less suddenly, in the course of diabetes, characterized chiefly by coma, and often ending fatally in a very short time." We cannot, however, hold diabetic coma responsible for every sudden death occurring in diabetes, even though coma may form a principal symptom; there may be a well-known cause for the death, and distinctive lesions may be found after death. The death may be due to cerebral hæmorrhage, or to dyspnœic coma of acute pneumonia; or, as when a true nephritis exists with the diabetes, death may be due to uræmia.

In a paper read in 1881, before the Manchester Medical Society, Dr. Dreschfeld classified the cases of diabetic coma into three classes, according to the symptoms: one form, characterized chiefly by drowsiness, soon passing into coma; a second, resembling alcoholic intoxication, a marked symptom of which is a staggering gait, incoherent speech, and an excited condition of the nervous system, followed by drowsiness and coma; and a third, including the greater number of cases, in which dyspnœa is usually a most marked symptom, followed by coma, both the breath and urine having a strong odor of acetone, and the urine containing a peculiar body giving a deep claret color with perchloride of iron. Some time after this paper was read Frerichs adopted an almost identical classification as regards symptomatology, and more clearly distinguished the pathological differences between the first group and the other two. To the first group Dr. Dreschfeld would give the name "diabetic collapse," and as regards the symptomatology we find a condition somewhat as follows: "The patient, without any premonitory symptoms, begins to suffer from drowsiness, hebitude, excessive weakness in the limbs; the extremities become cold; hands, feet, and face become livid; the pulse quick, small, threadlike, soon reaching 120 and 130; the respirations are only slightly quickened, shallow, without there being much dyspnœa; the temperature gradually falls, the skin in some cases becomes covered with perspiration, and death ensues from collapse in most cases within ten to twenty hours. During the first few hours, the patient is still able to pass urine voluntarily. With the progress of the coma the urine is retained in the bladder; but, when withdrawn, is found to contain a considerable amount of sugar (5 to 8 per cent.), but no acetone or aceto-acetic acid. In two cases which I had an opportunity of seeing, it contained a small amount of albumen. The nervous system presents few other symptoms besides the coma; the pupils react, though somewhat sluggish; there may be some slight headache, but active delirium and convulsions are mostly absent. The post-mortem examination shows no marked naked-eye changes." The data are insufficient to enable us to show how many cases of diabetic coma belong to this group; but as regards the etiological factors we may draw the following conclusions: "1. Diabetic collapse occurs chiefly, though not exclusively, in older people, after the age of 40. 2. It attacks persons who have suffered from diabetic symptoms for some time, and who are, as a rule, still stout and well-nourished at the time of attack. In short, the cases belong more to that form of diabetes recently described by Hoffman as constitutional diabetes, or diabetes of stout people, where the course of the disease is slow and protracted, and where gout or nephritis form frequent associations, and where the

appearances of carbuncles and other necrotic changes are not uncommon." Prout pointed out that the exciting cause is some extra physical exertion in the majority of cases; and in a smaller number of cases an error of diet, or immoderate drinking. As to the cause of diabetic collapse, Frerichs believed it to be due to heart-failure from fatty degeneration; a view which seems to have the strongest support. Schmitz showed that of 109 diabetic patients eighty showed considerable heart-weakness. "If death be due to sudden exhaustion brought about by a more than ordinary demand being made on the constitution weakened and altered by the diabetes, we should expect a somewhat similar mode of death in other constitutional diseases where the heart's muscle is altered and the blood has undergone changes, but where there is no diabetes; and that this is actually the case, is easy of demonstration."

The alcoholic form of diabetic coma is rare, and Dr. Dreschfeld thinks that it is most likely identical with the third class. In its symptoms it resembles acute alcoholic intoxication, and Kulz has recorded a case in which the urine contained large quantities of alcohol. Frerichs has described some cases similar in symptomatology to alcoholic intoxication, in which the expired air smelled strongly of acetone; but no mention was made of the presence of alcohol in the urine. If this class is to be regarded as a distinct pathological type it will be necessary to have more definite data as to the presence of alcohol in the urine.

"Coma from acetonæmia," the term which Dr. Dreschfeld applies to the third form, is the most common of the three classes. He has observed sixteen fatal cases, and studied the pathological changes in ten cases. In making a detailed analysis of the symptoms we find those referable to the nervous system, the vascular system, the respiratory apparatus, the digestive system, the urinary organs, the temperature, and the blood. In regard to the first there is a period of excitement, during which there are headache, vertigo, a state of excitement not unlike that of alcoholic excitement, incoherent speech, and delirium bordering on mania. Convulsions are rare, though there may be jactitation. Sooner or later these symptoms are followed by signs of depression, such as hebetude, thick speech, drowsiness and coma. The pupils may be dilated or contracted, and react almost to the last. Abdominal pain is an early symptom, and may simulate peritonitis. The vaso-motor system is much affected; the face is often flushed at first, becoming pale afterwards, and the extremities become cyanotic. The skin may be dry at first, but later may be covered with clammy perspiration. The pulse is one of low tension, becoming quick, small, threadlike, and irregular; while the heart's action is feeble. The symptoms referable to the respiratory apparatus are marked dyspnœa, which may be one of the first symptoms, increasing to the last, inspiratory at first, and then both inspiratory and expiratory. It has been accurately described by Kussmaul, the thorax expanding well in all directions, the air, on auscultation, being heard to enter all the parts of the lungs; but in spite of this there is great breathlessness. The respirations may be increased or diminished in number. There is often a pain in the chest, and a limited pleuro-pneumonia may be sometimes found. The exhaled air has a chloroform-like smell, which is due to acetone. The symptoms referable to the digestive tract are, a dry red tongue, loss of appetite, nausea, vomiting of copious masses, and tense epigastric pain. There may be an intermittent constipation or profuse diarrhœa from the first. The urine is diminished, as well as the amount of sugar, which may entirely disappear. The urine is often very acid, but not always so, and the amount of ammonia is often increased. The urine has the peculiar odor of the breath, and contains acetone; giving the characteristic claret-red color with perchloride of iron, which is undoubtedly due to aceto-acetic acid. It may contain a large quantity of fat, and often contains albumin, from a trace to a considerable quantity. The temperature rises during the first stage, but it falls with the onset of coma, and may go down to 95°, 94°, or as low as 90°, just before death.

It may be said that diabetic coma is fatal in about 90 per cent. of the cases. Some of the cases run their course without premonitory symptoms, within from twelve to twenty-four hours, though in about 60 per cent. of the cases the duration of the attack is two or three days, and has such premonitory symptoms as lassitude, abdominal pain or dyspnœa; while in other cases the coma is preceded by several weeks or months by a condition which is known as chronic acetonæmia. After the graver symptoms of coma have appeared it is exceptional for the patient to show any improvement. In rare cases the symptoms may improve for a time, and then reappear with fatal results, or a gradual and steady improvement may take place.

Several points in the etiology of diabetic coma seem to be clearly established; it chiefly affects younger persons. Pavy found that 55.65 per cent. of the cases of diabetes occurred between the ages of 40 and 60; and from an analysis of 80 cases of diabetic coma Dreschfeld finds that 70 per cent. oc-

curred between the ages of 20 and 40, and only 24 per cent. between 40 and 60. It may occur at a much earlier age, even under 5 years. The coma may come on very early in the course of diabetes. In the younger persons it usually appears from six to twelve months after the first symptoms of diabetes; while in older persons it comes on later. It seems to occur almost exclusively in the severer forms of the disease. There are reasons for supposing that hereditary disposition may play some part in the etiology of the affection. Excessive physical exercise is the exciting cause in about 50 per cent. of the cases; mental shock about 10 per cent. Sudden change from a mixed to an exclusively nitrogenous diet is an exciting cause. Coma sometimes follows a surgical operation on a diabetic; though we cannot say whether this is due to the shock to the nervous system from the operation, or to the anæsthetic—more probably the former. It may also follow intercurrent febrile affections occurring in diabetic patients.

In any discussion of the pathology of diabetic coma we must give greater prominence to the abnormal bodies circulating in the blood and appearing in the secretions; fat in the blood, and acetone, aceto-acetic acid, and β-oxy-butyric acid. As regards the presence of fat in the blood, it will be remembered that Sanders and Hamilton put forth the ingenious but untenable theory that the symptoms of diabetic coma might be due to fat-embolism. Acetone and aceto-acetic acid are found in the majority of cases of diabetic coma. Dreschfeld has not failed to find them in any case examined since Legal's test was made known; this consists in the addition to the distilled portion of the urine of a small quantity of caustic soda solution, then a few drops of a solution of sodium nitro-prusside, and then a few drops of acetic acid, when a beautiful red color appears if acetone be present. The tests for aceto-acetic acid are as follows: 1. The urine is treated with concentrated solution of perchloride of iron, and filtered from the phosphates, which are precipitated. The claret-red color disappears on heating. 2. The urine, after the addition of a small quantity of dilute sulphuric acid, is shaken up with ether, and in the ether extract, which takes up the aceto-acetic acid, perchloride of iron produces again the characteristic color which gradually fades on standing. 3. The urine, on distillation, gives characteristic reaction for aceto-acetic acid is easily decomposed.

Have these bodies any toxic effect when administered to man? It seems that they have not, though Dreschfeld and others have tested the matter thoroughly. If present in the blood of animals in large quantity, and not quickly eliminated, they will produce effects similar to those of diabetic coma. Acetone and aceto-acetic acid may occur in the urine in many acute and chronic and acute diseases; and though they often cause only slight and temporary symptoms, they may give rise to the dangerous symptoms of diabetic coma (or the coma seen in diabetes). There seems to be little doubt that the functions of the kidneys and liver are seriously impaired in diabetes, even though the material changes may not be prominent; and there is reason to believe that the impairment of the hepatic functions is the more serious. "Whilst believing that acetone has a large share in the production of the symptoms, I hold that it is only one of a series of bodies of which aceto-acetic acid is another, β-oxy-butyric acid a third, and of which there are probably more, which, if not quickly eliminated, act powerfully on the nervous system, and thus produce diabetic coma. Whether some of these acids act by withdrawing the alkalies from the blood; in fact, whether they produce an acid intoxication, as Stadelmann and Minkowsky believe a statement which is supported by the experimental research of Walter on the action of acids on certain animals, remains yet to be seen." Dr. Dreschfeld compares the third form of diabetic coma to uræmia, though the toxic agents and symptoms are different. It is possible that the studies of Brieger, Bouchard and Gautier on the fermentative changes going on in the body will yet throw some light on these obscure subjects.

EMOTIONAL ICTERUS AND LICHEN.

So many cases of emotional icterus are on record that it is scarcely worth the while to enter into a statistical discussion to show the existence of such an affection. Dr. Negel, of Jassy, Roumania, reports, in *Progrès Médical*, of August 21, a "case of emotional icterus accompanied by a general eruption of lichen," which is sufficiently rare to give in detail. The patient was 23 years old, of robust constitution, with a tendency to obesity, and for some years subject to acne of the face and back, and there was slight submaxillary engorgement. There was no hereditary taint in the patient.

In February, 1885, there was an herpetic eruption on his prepuce, which he himself treated with cauterizations of nitrate of silver, as a result of which there was an enormous ulcer and balano-posthitis. He then consulted a physician, who ordered emollient dressings, but the ulcer grew larger. To make a

long story short, the physician finally told him that his penis would gangrene; but the patient showed so much alarm that Dr Negel was consulted. When he arrived some time later, he found that the patient's urine was brown, and left a deposit in the *pot de chambre;* the fæcal matters were colorless, and there was slight constipation. This state lasted for two days, when the patient noticed that his saliva was bitter, and there was slight fever. There was now intense icterus, accompanied by an eruption of lichen, situated principally on the thorax (back and sides), abdomen and face, the limbs and scrotum. It was of the simple variety, and presented a few vesicles here and there. The urine contained a great deal of bile pigment. An emeto-cathartic was given, and then saline purgatives, lemonade, bicarbonate of soda, and antiseptic dressings were applied to the ulcerated and swollen prepuce.

After ten days of treatment the ulceration and balanitis were almost cured, but the lichen persisted. The icterus had greatly diminished. After about three weeks the patient was practically well, but there was still some jaundice and lichen.

ARTIFICIAL QUININE.—*The Lancet*, of August 28, intimates that Mr. Creswell Hewett has made a discovery by which quinine may be made by synthesis, from an article which may be got in abundance in any part of the world. It is thought that Mr. Hewett will put himself in communication with the British Government, which spends $300,000 annually in India alone in the cultivation of the cinchona tree.

SOCIETY PROCEEDINGS.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Tenth Annual Session, held at Indian Harbor Hotel, Greenwich, Conn., August 25, 26, and 27.

WEDNESDAY, AUGUST 25. FIRST DAY.

MORNING SESSION.

THE PRESIDENT, DR. EDWARD WIGGLESWORTH, of Boston, delivered the

OPENING ADDRESS.

Just ten years ago, at Philadelphia, I had the honor of calling to order the first public meeting for the organization of this Association. Our specialty for the first time, received national acknowledgement. Our guerilla warfare was over and our subsequent record has been one of unbroken successive victories over bigotry, error and ignorance. But the day of Paladins is past and our ranks will admit more recruits. There are still remaining opportunities for more extended instruction of students in medical schools, while the lack of hospital facilities for the proper clinical treatment of diseases of the skin, is a standing shame and disgrace to our municipal authorities, our hospital boards, and to the medical profession itself. "As now arranged nearly everywhere amongst us, these institutions refuse to a large class of sick persons, the benefit of hospital residence either wholly, or offer them, if received, not we may fairly say, the best medical skill it is in their power to procure." Some progress has, however, been made. New York has now a special hospital for skin diseases, besides two wards in the Charity Hospital, and Philadelphia has special clinics with beds at three different institutions.

About twice as many cases of diseases of the skin are now annually treated by specialists as there were ten years ago. The contributions to American Dermatological literature during the past decade, include the best treatises, hand-books and atlases, the only periodicals and some of the best monographs of the time, in the English Language.

While much has been accomplished, much still remains to be done. The idea of specialism, already rooted, is to be nurtured and trained in the minds of the profession and of the public, and the practical development socially of our specialty itself is to be elaborated in many minor details. The pioneer must no longer prove a martyr. A knowledge of the weaker side of human nature, useful for selfish financial ends, must no longer be allowed to usurp the province of exact scientific acquaintance with disease, inuring to the benefit of our race. The "elaborate division of labor" is as "useful and successful in a learned profession as it is in the mechanic arts," for it is merely a relative question of height of standard. Specialism substitutes quality for quantity, which substitution is the essential characteristic of the civilized man as distinguished from the savage, while the rapidity of such substitution, gauges the progress of civilization itself. Medicine is merely that complex whole which results from the combination of all its component parts, and their individual advancement is the criterion of its own progress.

Believing in the ultimate achievement of all possibilities and in the progress of Truth, I have no doubt as to the future of specialism if we are honest and earnest. Not infinite omniscience, but infinite morality is the duty of the specialist, and this conscientiously carried out, will blunt the sharpest dart of the hostile general practitioner. While visions of what yet remains to be accomplished might well lead us almost to despair, a mere glance at the generally prevailing ignorance on the part of both physicians and their patients, shows conclusively that we and our work are imperatively demanded.

DR. EDWARD BENNET BRONSON, of New York, read a paper which was entitled

ERYTHANTHEMA SYPHILITICUM.

Attention was called to certain cutaneous eruptions of an erythematoid character occurring in connection with syphilis, and the attempt was made to de-

termine their etiology. A case was reported of a syphilitic patient who developed a peculiar eruption upon the head, hands and feet. Although the eruption presented no pronounced syphilitic characteristics, it was regarded as due to syphilis for the reasons that it was shortly followed by an outbreak of well-marked specific efflorescences on various parts of the body, and moreover, there was a transformation of the eruption upon the head, into infiltrated lesions presenting a distinct syphilitic character. The eruption first appeared on the face in the form of an erythema which was covered with vesiculo-papular efflorescences. Later, a similar outbreak occurred on the nape of the neck. The vesiculo papules broke, leaving excoriated surfaces of a diphtheritic character from which there exuded an exceedingly abundant, foul-smelling discharge. Soon after vegetating growths made their appearance, which upon the bearded parts of the face were quite exuberant and resembled condylomata acuminata. Those upon the neck, formed more discrete, tuberous prominences and had the appearance of condylomata lata; while upon the upper parts of the face, the elevations were nummular and had comparatively smooth, though somewhat lobulated surfaces. After a week or two, the erythematous areas, which formed the bases of the vegetating lesions, became the seats of a gradually increasing, copper-colored infiltration. The palms and corresponding surfaces of the fingers, were covered with a deep-red sharply circumscribed erythema, which was followed by lamellar desquamation. A similar eruption occurred in patches upon the soles. The finger nails were all more or less affected with onychia sicca. Upon the body and limbs, several crops of well-marked syphilitic papules succeeded each other, and finally all the manifestations yielded rapidly to mercurial treatment. The preliminary eruption in this case was characterized as an erythanthema dependent in some way upon the specific disease. Other instances of erythematoid eruptions occurring incidentally to syphilis, were referred to as being more or less analogous to the above cited case.

He attempted to define more precisely the etiological relations of these various erythematoid eruptions occurring in connection with and probably as a consequence of syphilis. It was maintained that probably they were not equivalent in their mode of origin to the syphilodermata, but rather to certain angioneurotic or neuritic affections, which they closely resembled. The true syphilodermata are always characterized by a specific infiltration and are probably the result of a determination of the *materies morbi* to the surface. They are therefore pathognomonic of syphilis. The erythanthema syphiliticum, on the other hand, is only an indirect effect of the syphilis, the result of reflex irritation of the skin from the action of the skin from the action of the disease upon nervous centres, and therefore not pathognomonic of syphilis. The fact that this might be followed by a true syphilitic infiltration *in situ*, was regarded as analogous to the effect sometimes observed of traumatic irritation in syphilitic subjects, where local injuries became the seat of specific infiltrations.

Dr. I. E. Atkinson, of Baltimore, held that with reference to pathognomonic syphilitic eruptions, a great deal of caution should be exercised. Lesions similar to those described by Dr. Bronson are not of excessive rarity in cachectic subjects and in cases of malignant syphilis, but in his experience, they have always been manifestations of late or tertiary syphilis.

Dr. J. C. White, of Boston, said that the diseases which had been described are so rare in syphilis, so little is known of the nature of erythema nodosum and its causes, and we know so little of the nature and causes of so-called erythema herpetiformis, that it seems to him that we must have some more exact data before we can regard these affections as a necessary sequel of syphilis, and as anything more than accidental occurrences.

Dr. G. H. Tilden, of Boston, thought that in the present state of our knowledge it would be more philosophical to consider the appearances described as accidental rather than as dependent upon the specific disease.

Dr. I. E. Atkinson, of Baltimore, read a paper on

rubella or rötheln.

The paper was based upon a review of the literature of the subject and a study of the reported cases, and gave a complete account of the disease, as regards its symptoms, duration and diagnosis. On account of the confusion existing as to the nomenclature of this disease, the speaker suggested that rubella be accepted as its proper title, and that it might be known in popular language as epidemic roseola.

Dr. Wigglesworth said that he had suggested several years ago that measles be called morbilli, and rubeola or rötheln be used to signify what is termed German measles, and roseola be reserved as the title for the rose-colored spots seen in syphilis and other conditions. There seem to be no necessity for the introduction of a new term.

Dr. G. H. Fox, of New York, reported a case of

lymphadenoma (mycosis fongoide) and autopsy.

Mrs. G., aged 33 years; the mother of six children. During pregnancy in the summer of 1881, she suffered with general pruritus, which passed away after confinement in October. A year later, small flattened circular tumors appeared in the axillæ and on the breasts. These became moist and were accompanied with a burning sensation. The eruption disappeared from these situations and reappeared upon the back and other portions of the body. After the birth of her last child in February, 1885, a tumor developed at the inferior angle of the left scapula. The lesions on the other parts of the body disappeared with the exception of two spots on the finger, and one on the left cheek. The tumor on the left scapula gradually softened and disappeared.

The patient was admitted to the hospital in October, 1885, and was fairly well nourished. There were at this time numerous tumors over the body, some of which were superficially ulcerated. The worst tumors were on the breast. Hypodermic injections of Fowler's solution were used without benefit. Chaulamooga oil was given in increasing doses

until forty drops four times daily were taken without causing any improvement.

The patient died in April, 1886. The microscopical examination gave usual appearances of these growths. The internal organs were found to be normal.

DR. G. H. TILDEN remarked that Rindfleisch states that he has found a distinct micrococcus inside of the blood vessels in this affection. Recently this has been confirmed by another observer. It looks as though what we ordinarily know as malignant lymphoma, affecting the lymphatic glands, with deposits in other parts of the body (Hodgkin's disease), is one of the infectious diseases. He thought it probable that mycosis fongoide is a variety of the same disease, and that it is nothing but an acute infectious disease.

DR. J. NEVENS HYDE, of Chicago, read a

NOTE RELATIVE TO THE BULLOUS ERUPTION OCCURRING AFTER THE INJESTION OF IODINE COMPOUNDS

(Read by the secretary).

Several illustrative cases were reported. There are two distinct types, the bullous and the quasi-bullous eruption produced by the injestion of iodide of potassium. In the first form the patients are often well advanced in years, often cachectic and frequently affected with syphilis or other grave disease. In what may be regarded as a second sub-form of this exantheme, there are di- or polymorphic symptoms. Here bullæ are commingled with papules, tubercles and other patches of disease. In conclusion the author presented the following interrogative propositions:

1. Are there not three sub-forms of the bullous exantheme developed in certain individuals after the injestion of iodide of potassium?

2. Is not the first and most common of these to be generally recognized in persons of advanced age and cachectic condition, the rash being then present in the form of typical bullæ?

3. Is there a second and still rarer sub-form, in which the eruption is displayed in di- or polymorphic manifestations, typical, perfect bullæ being then mingled with papules, tubercles, scarlatiniform maculations or with other and different lesions?

4. Is there not a third and rarer sub-form, the quasi-bullous rash to be most frequently recognized on the face and dorsal aspect of the hands and forearms of infants and children, where the lesions are semi-solid, slightly umbilicated and filled with inspissated yellowish matter, and which may shrivel and dessicate on the suspension of the drug inducing the condition?

5. Is this last described lesion one to be recognized solely as the result of the injestion of iodide of potassium, never under other circumstances, and one as peculiar to the special condition it represents as is the gumma to syphilis?

DR. R. W. TAYLOR, of New York, reported a case of a peculiar form of iodic poisoning. It was in a case of gummatous infiltration of the pharynx where iodoform had been resorted to as a local application. In the course of two hours it produced a diffuse eruption on the face, neck and hands. On the hands, it assumed an eczematous character.

DR. J. E. GRAHAM, of Toronto, described the case of a young man 22 years of age, had contracted syphilis two years previously. Noticing some pimples on his face he secured a preparation of iodide of potassium containing 5 grains to the dose. Two days later after he had a bullous eruption, principally upon the face and neck. Thinking this was a tertiary manifestation the dose was increased to 15 grains. Two days later, the eruption on the face was much increased, and recognizing the cause of the condition, the remedy was stopped and the eruption rapidly disappeared.

DR. ATKINSON referred to a case of what was supposed to be malignant syphilis, the patient had had syphilis, and had been put on the use of iodide of potassium. The lesions continued to increase, and after the iodide had been taken for six months, Dr. A. saw the case. There was an enormous formation of scar-tissue over the face and neck. In addition there were bullæ and elevated infiltrated plaques. The drug was stopped and in six weeks the ulcerations had healed, the cicatricial tissue of course remaining.

EVENING SESSION.

DR. R. W. TAYLOR, of New York, read a paper on

PRECOCIOUS GUMMATA.

Of the precocious gummatous syphilide or gummata there are three quite clearly marked forms: *First*, the early, general and copious form; *secondly*, the more localized form, which may invade several regions and is usually symmetrically distributed; and *thirdly*, a form in which more or less severe neuralgias precede and accompany the eruption, which in many particulars resembles simple erythema nodosum, but which in its etiology is not in any way related to this simple form of eruption, but is a direct outcome of the syphilitic diathesis. These precocious gummata partake in general of the features of those of later forms, but they differ in a more acute invasion, in a much more rapid course, and are usually not as destructive in their action as the classical eruption. In the treatment of these precocious gummata syphilides, a combination of mercury and iodide of potassium is much more efficacious than is mercury alone.

DR. F. B. GREENOUGH, of Boston, read some

CLINICAL NOTES ON SCABIES.

He said that since the establishment of the special department for skin diseases at the Boston Dispensary, thirteen years ago, he had had the opportunity of studying a large number of cases of scabies, and had been much interested by the rapid increase in the number of cases seen in the past few years. The percentage of cases of scabies to cases of other cutaneous diseases had varied from $\frac{3}{10}$ per cent. in 1876 to over 13 per cent. during the past year. This great increase in frequency seemed to be one of the most interesting and important points brought out by his notes. Four-fifths of the cases seen were between 5 and 30 years of age, and only four cases were over 60 years of age.

The facts which were especially noticed were the

few cases in which typical burrows could be found; the great constancy of the manifestations on the penis in male subjects; the difference of the symptoms produced by scratching according to the situation of the lesion, and the success of treatment. He has used almost entirely an ointment consisting of two parts of sulphur, one of carbonate of potash and three of petroleum ointment, simply cautioning the patients against applying it to inflamed and pustular localities.

Dr. A. R. Robinson, of New York, said that opening a vesicle, examining its contents under the microscope, and finding the young acari or the fæces, would settle the diagnosis in doubtful cases.

Dr. E. B. Bronson, of New York, agreed with the author of the paper as to the frequent absence of the cuniculi. In many cases he depended largely upon the elongated character of the efflorescence in making the diagnosis. In the treatment of scabies he had used a 50 per cent. preparation of naphthol with success.

Dr. S. Sherwell, of Brooklyn, had also seen an increased number of cases of scabies, a large proportion of the cases being among Scandinavians. As a prophylactic, he directed the patient to sprinkle on the sheet a teaspoonful of the dry sulphur. This acts as a disinfectant and is unpleasant to the acarus.

Dr. H. W. Stelwagon, of Philadelphia, read some

CLINICAL OBSERVATIONS REGARDING THE VALUE OF RESORCIN, ICTHYOL AND LANOLIN IN CUTANEOUS DISEASES.

In regard to lanolin, he said that in some cases as an ointment base this is superior to the ordinary fats in use. Where a simple protective action is desired, it is inferior to vaselin, cold cream or lard. In chronic cases, where there is infiltration and a degree of penetration is the object, lanolin is especially valuable. The writer stated that according to Liebreich, a lanolium purissimum was now manufactured, in which the cholestrin ethers were absent. The main disadvantage of lanolin as now manufactured from sheep's wool is its strong sheepy odor. In a few acute and subacute cases of eozem, lanolin for some reason proved irritating. As a rule, however, it is bland and unirritating.

Tuesday, August 25—Second Day.

Morning Session.

Dr. G. H. Tilden, of Boston, read a paper entitled

TROPHONEUROSIS OF THE SKIN CAUSED BY INJURY OF THE MEDIAN NERVE.

A carpenter, 55 years of age, was wounded in the wrist by a circular saw, four months before coming under observation. The wound was parallel with the axis of the limb. Three or four days after the infliction of the injury there was loss of the tractile sense and a feeling of numbness in the last two phalanges of the fore and middle fingers. This had continued and steadily increased. Three weeks after the accident, a bulla appeared upon the terminal phalanx of the middle finger. Similar lesions have developed from time to time upon the last two phalanges of the fore and middle fingers. The bullæ appear every two or three weeks and are unaccompanied by any subjective sensation. The skin over the affected phalanges is of a white color and of glossy texture. The growth of the nails is unaffected. There was entire loss of sensation in the skin covering the affected phalanges. The right hand is capable of exerting only one-half the power of the left. The first and second interossei muscles exhibited the reactions of degeneration.

Six weeks' treatment with the Faradic current caused decided improvement in all the symptoms. During this period only one bulla formed. He then stopped treatment and returned to work. Three weeks later all the former symptoms suddenly returned. It was proposed to the patient that an incision be made over the seat of injury with the view of determining the exact condition and if possible remedying it. The patient has not since been seen. After briefly considering the pathology of such lesions, the speaker said that the treatment of these cases consists in the use of electricity and the application of blisters over the seat of injury. A last resource is to cut down upon the affected nerve and endeavor to relieve any constriction or pressure which may be found. If no such condition is detected, resection of a portion of the nerve might be advisable, since complete section is not apt to be followed by spontaneous trophic changes and since it has been found that resection of a portion of the affected nerve is sometimes followed by the arrest of the trophic changes.

Dr. James C. White, of Boston, read a paper entitled

NATIVE PLANTS INJURIOUS TO THE SKIN.

He enumerated over fifty species which have irritating properties, when brought in contact with the skin.

Dr. F. B. Greenouh, of Boston, read

A FEW ADDITIONAL NOTES ON PSORIASIS.

The author, owing to the fact that a statement he had made at the last meeting in reference to the general health of the patients, had been doubted, had attempted to obtain further testimony upon this point. He found that, as a rule, patients with psoriasis were above par in general health and strength. He had records of twenty-nine cases of 1,220 cases of skin diseases, giving a ratio of cases of psoriasis of 2⅓ per cent. The reader thought that the interesting deductions to be drawn from his cases were the facts that while nine cases showed symptoms of psoriasis under 10 years of age, one was first attacked at the age of 57 years; that out of twelve cases in which evidence could be obtained, four gave a decided history of the existence of disease in some member of the family, and that these cases showed such a high standard of general health. He considered this latter fact as a strong argument against the possible connection between psoriasis and syphilis.

Dr. A. R. Robinson, of New York, described a case of

CHONDROMA OF THE UPPER LIP.

The tumor occurred in a man 36 years of age and had been growing two years. It was one inch in length by three-fourths of an inch in diameter. It was egg-shaped, the broad end having its seat in the submucous tissue among the mucous glands. The mucous and cutaneous structures were freely movable over the tumor, which was sharply limited, somewhat encapsuled, and nourished by a small artery entering at the base. Microscopical examination showed the tumor to consist of embryonic, gland, and connective tissue. There were several islands of cartilage, the largest being in the central part of the tumor. All varieties of normal cartilage were present, viz.: hyaline, fibrous and reticular, and also the variety met with in the heads of cephalopods, namely, cartilage with ramifying or branched cells. The cells showed great diversity of form and size. The body of the branched cells presented a great variety of form. Some were surrounded with a capsule, but in the majority of cases this was absent or only faintly indicated. The affection was considered to be very rare.

DR. P. A. MORROW, of New York, read a paper on

KERATOSIS FOLLICULARIS, ASSOCIATED WITH FISSURING OF THE TONGUE AND LEUKOPLAKIA BUCCALIS.

The patient, a sailor aged 21 years, came under observation in December, 1885. Five years previously, soon after beginning his seafaring life, he noticed a number of blackish points upon the back of the hands, some of which he squeezed out. Soon afterwards these appeared upon other parts of the body. They improved when he was on land, but were aggravated when he was at sea. The entire surface of the body, with the exception of the face, palms and soles was found to be seat of the follicular disorder. The ducts of the sebaceous glands were occupied by comedo-like bodies projecting sometimes one-fourth to one-half an inch above the surface. From many of the follicles small white hairs protruded. The comedos when pressed out were hard and dry. The hard portion of the comedo was continuous with an adhesive substance dipping deeply into the follicle. There was no evidence of irritative or suppurative action.

The tongue was large and rough to the touch; the surface was deeply fissured, the fissures extending to the submucous tissue. The buccal mucous membrane presented a bluish-white appearance, thickened and raised in places, forming distinct plaques which were superficially fissured. The absence of irritation or marked sensitiveness of the fissured organ was quite noticeable. Examination seemed to exclude the possibility of a syphilitic origin. The speaker referred to other cases which had been reported. He objected to the term ichthyosis, since that suggests a disease of a different nature. He selected the term keratosis follicularis as more correctly expressing the pathological condition present, as well as indicating the anatomical seat of the disease. Drawings representing the microscopical appearances of the lesions were presented.

EVENING SESSION.

DR. J. E. GRAHAM, of Toronto, Canada, read

A CLINICAL STUDY OF SCLERODERMA.

The histories of two cases of this rare disease were related. The first patient, Mrs. R., 47 years of age, had previously suffered from rheumatism. The hardening of the skin began in March, 1882, and was first noticed over the back of the neck. It gradually spread so that in about ten weeks the integument over the greater part of the body was affected. The movements of the limbs as well as those of respiration were impeded. The internal treatment adopted was liquor ferri iodidi and liquor arsenitis. A Faradaic bath over the surface of the skin was used. In six weeks the skin began to grow softer, and in ten months the patient was quite well. There has been no return of the difficulty.

The second patient, Mr. H., aged 37, came under observation in May, 1886. There was a history of hereditary rheumatism. The disease had commenced some months previously. The first symptoms were stiffness of the limbs with œdema of the lower extremities. Then hardening of the skin over the hips was noticed, this gradually spread and was accompanied with pigmentation. The treatment consisted in the administration of potassium iodide at first, and latterly of salicylate of sodium. There has been some improvement under this treatment.

In his remarks in connection with the disease, the speaker referred to the following points: 1, that the disease is found principally in temperate climates and occurs in seasons when there are sudden changes in the weather; 2, that it is more closely related to rheumatism than has been supposed; 3, that although morphœa has in all probability a similar pathological origin to scleroderma, yet the clinical distinctions are so marked, that at present it is expedient to treat it under a different name.

DR. LE GRAND M. DENSLOW, of St. Paul, Minn., read a paper on

CARCINOMA CUTIS.

The patient, aged 49 years, had been an invalid for several years. He had had a severe pleurisy of the right side and presented the physical signs of absence of the right lung. The skin of the whole right chest was covered with a nodular new growth, which presented no ulceration. The older portions of the growth were covered with thickened epidermis and thick brown scales. There was slight enlargement of the axillary glands. The different nodules were not movable beneath the skin, but the whole mass was free from the fascia. The duration of the growth was seven months. The patient died four months after coming under observation.

The autopsy showed obliteration of the right lung. The left lung presented many small solid nodules. In the mesentery there was a nodule one and one-half inches long by one-half inch in diameter. The microscopic examination of these masses showed that in them all connective tissue preponderated. The growth on the skin occupied the papillæ and the deeper portions of the corium. A plaster cast and a drawing of the case were presented.

Dr. R. W. Taylor described two cases which were for a time looked upon as cases of cancer of the nipple, both in men. They eventually turned out to be cases of hard chancre.

Dr. I. E. Atkinson, of Baltimore, read a paper on

SCARLER FEVER AND SCARLATINIFORM ERUPTIONS FOLLOWING INJURIES AND OPERATIONS..

The following conclusions were presented:

1. Unprotected persons who have suffered injury or undergone operations are much more liable to scarlet fever than healthy individuals. This probably holds good with reference to other infectious diseases.

2. When an epidemic tendency to these symptoms prevails after injuries and operations, it may be concluded that true scarlet fever is present.

3. Septicæmia is occasionally accompanied with a scarlatiniform eruption.

4. Medicinal eruptions, especially from cinchona alkaloids, may follow accidents and injuries.

Dr. P. A. Morrow, of New York, said that carbolic acid and iodoform dressings will often produce rashes presenting the objective appearances of scarlet fever. There is another eruption known as the "doctor's rash" which appears upon the persons of sensitive individuals stripped for examination.

Dr. L. N. Denslow described the case of a young woman who stated that a scarlatiniform eruption always appeared upon her body on exposure to sunlight. In order to test the matter, she was directed to come to the hospital closely veiled and gloved. She was placed in a dark room and one glove removed. A ray of sunlight was then allowed to fall upon the hand, and at once a strip of erythema appeared. The same occurred on the face when it was exposed.

Friday, August 27.—Third Day.

Morning Session.

Dr. S. Sherwell, of Brooklyn, read a paper entitled

REMARKS AND QUERIES ON AND AS TO THE RELATIVE FREQUENCY OF MOLES AND THEIR PATHOLOGICAL CHANGES ON THE HEAD AND FACE.

These affections receive very slight notice in works on dermatology. In looking up the statistics of one of the institutions with which he is connected, he found that in a period of eighteen months he had seen forty-seven cases suffering with neoplastic and hypertrophic growths. In thirty-six of the cases the growths occupied the face and head. In only eleven cases were the growths found on the body and limbs. Seventeen of the cases in which the growths were on the face were classed as epithelioma. It might be urged that the exposure of the unclothed portions of the body would lead to the formation of neoplasms and the occurrence of destructive activity in them. If that were so, why should not telangiectasic deformities, naevi, etc., undergo degeneration? The speaker had never seen malignant action, or what simulated it, in such growths. Mechanical irritation of the parts might be considered one reason for the frequency of these growths and their malignant tissue alterations; but other parts of the body would seen more exposed to irritation than is the face. Moles, and similar growths, in other situations than the face, seem less likely to undergo destructive pathological changes.

The most rational explanation for the frequency of these growths in the situations described, is the activity of the circulatory nutrition in these locations, which most favor hyperplasia. If, however, we accept the above hypothesis, why should these errors of the capillary system, such as naevi, not oftener degenerate? He had often operated on the latter deformities, often causing much irritation, but had never seen more than a slight keloid change result. The speaker then referred to the special danger of malignant degeneration which attended the presence of moles in persons of advanced life.

In regard to treatment, he had come to the conclusion that when malignant action is either present or suspected, the combination of Volkman's curette, followed by the actual cautery, is the most efficient and easiest method of treatment. Of all escharotics, he preferred the liquor hydrargeri nitratis.

Dr. I. E. Atkinson said that the probable explanation of the frequency of the presence of moles, etc., upon the face as compared with other portions of the body, is that when in this situation, patients seek relief, while when covered with the clothing attention is not attracted to them.

Dr. James C. White remarked that while these formations are not more frequent on the face than on other portions of the body, yet that they undergo degeneration and form epitheliomatous new formation on the face more frequently than elsewhere can be doubted. He had never seen angiomatous formations undergo the so-called malignant change, but they do undergo degenerative processes tending to a spontaneous cure.

Dr. L. N. Denslow had employed as a caustic a solution of one drachm of bichloride of mercury in one ounce of traumatacin. Its application is not painful at first, and does not excite inflammation for some time.

Dr. W. A. Hardaway, of St. Louis, read some

NOTES OF A CASE OF EXFOLIATIVE DEMATITIS (PITYRIASIS RUBRA?) WITH BULLOUS LESIONS.

February 21, 1886, the author was called to see Mrs. A., with an annoying disease of the skin. The patient was 45 years of age, stout and somewhat nervous. The present disease came on Feb. 1, after a night of fatigue and exposure. The following day a red patch appeared on the pit of the stomach. Others developed soon, running together, leaving no healthy skin between. There was very little scaling at first, and no moisture. When seen by the author the skin presented the usual appearance of pityriasis rubra. There was neither moisture crusts nor appreciable infiltration. The skin was shining and of a violaceous hue. In the morning a handful of scales could be gathered from the sheet. The face was not involved. Three or four days after the first visit there appeared upon the thighs, abdomen and buttocks a number of tense bullæ. Their appearance

was preceded by a distinct chill and followed by a moderate elevation of temperature. The blisters did not run into each other. The bullæ appeared in successive crops of not more than a dozen, each crop being preceded by a chill. Quinine was freely administered, and at the end of a week the bullæ ceased to appear and the patient gradually improved.

The writer thought that this and other cases which he had seen showed diseases usually supposed to run a dry course may, under certain circumstances, be complicated with lesions containing fluid.

DR. G. H. TILDEN, of Boston, reported

A CASE OF PROBABLE TUBERCULOSIS OF THE SKIN.

A healthy-looking boy of 2 years of age was first seen in July, 1885, presenting six or eight cutaneous lesions scattered over various parts of the body. They were slightly elevated above the level of the skin, of a bright red color, which disappeared entirely on pressure. These nodules were hard to the touch, with borders of sensible infiltration. These lesions had appeared within the previous five months and had been very slow in growth. During the previous three months there had been failure in appetite and strength. Softening took place in the nodules with formation of pus, which discharged and was followed by cicatrization. About two weeks after the first visit a fluctuating swelling made its appearance. The general health became visibly affected. In November there appeared in the left buttock a swelling which gave an obscure sense of fluctuation. In the proximal phalanx of one finger there appeared a pyriform enlargement resembling that seen in dactylitis syphilitica. The child was again seen in February. The swelling in the buttock had increased in size and there was more fluctuation in it. There was at this time sufficient outward curvature of the lumbar vertebræ to justify a diagnosis of Pott's disease. From the course of the disease the speaker thought the most probable diagnosis to be tuberculosis of an unusual form.

DR. DENSLOW made a supplementary report with reference to

THE TREATMENT OF ACNE BY THE USE OF SOUNDS.

At the last meeting he had reported five cases in which this plan of treatment had been of value. Four of these cases were adults and all had remained well. The fifth case was that of a boy about 14 years of age, and in this case relapse had occurred.

A communication with reference to the organization of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was received and the following committee of conference, to report at the next annual meeting of the Association, was appointed: Drs. H. G. Piffard, of New York; F. B. Greenough, of Boston; R. B. Morison, of Baltimore; C. H. Tilden, of Boston, and Le Grand N. Denslow, of St. Paul.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. H. G. Piffard, of New York.

Vice-Presidents—Dr. F. B. Greenough, of Boston; Dr. R. B. Morison, of Baltimore.

Secretary—Dr. C. H. Tilden, of Boston.

Treasurer—Dr. Le Grand N. Denslow, of St. Paul.

The Association then adjourned to meet at the call of the Council.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, May 20, 1886.

THE PRESIDENT, H. O. MARCY, M.D., IN THE CHAIR.

H. J. HARRIMAN, M.D., SECRETARY.

DR. W. O. HUNT read a paper entitled

PUERPERAL INSANITY.

The paper was based upon two cases of puerperal insanity occurring in the practice of the writer.

Mrs. H., married, colored, 23 years of age, primapara. Labor was long and tedious, though uncomplicated. Nothing abnormal occurred until the sixth day, when patient became talkative, sleepless and delirious. She developed a mild case of insanity which, under absolute quiet and plenty of nourishment, resulted in recovery in six weeks.

Case 2.—Mrs. M., supposed to be in last part of seventh month of pregnancy; married against her wishes; of nervous temperament, but no heredity. Had a fall, striking upon left side of abdomen, which caused pain and soreness. On the day following the fall labor pains set in and a small and feeble child was born without complication. On the day following delivery there was much pain at site of injury; pulse 90; temp. 99.5, with a slight chill. For about a week patient improved, the pain disappearing and temperature and pulse becoming normal. At that time patient was prostrated by shock due to the fact that her husband came home drunk and tried to sleep with her. Patient became delirious and talked all the time; pulse 120, temp. 100. For about two weeks patient continued to grow worse, both mentally and physically. At the end of that time a chill occurred and slight dulness was discovered over lower lobe of right lung. The lung symptoms subsided in two days, but left patient much prostrated. Urine and fæces were passed involuntarily in bed; mouth and teeth were thick with sordes; perspiration profuse and foul smelling; intelligence entirely wanting. From this low condition she soon began to rally, and in about three months from beginning of attack had entirely recovered.

Puerperal insanity is confined to a limited period following childbirth, and is intimately connected with that process. It is not of rare occurrence—one-twelfth of the women admitted to Salpetriere presenting symptoms of this trouble—but among the higher classes it is not so frequent. Primapara are more subject than multipara, and women between 30 and 40 years of age, who are confined for the first time, are especially liable. Heredity is frequent. In most cases conditions producing debility, exhaustion or mental depression, such as post-partum hæmorrhage, complicated labor, or anæmia, precede, the

attack. The theory formerly held that puerperal insanity was due to some uterine lesion, has been discarded. The theory of the septic origin of this disease was introduced by Sir James Y. Simpson, and, with various modifications, has been adopted by many later writers. The fact that albumen is often found in the urine has given rise to the theory that the poisoning is uræmic.

The attack is often preceded by restlessness and loss of sleep. At an early period there is an agitated manner, a restless eye, an anxious expression of the face, an irritable temper, loss of memory, etc. The language becomes incoherent and is often obscene. Delusions appear and suicidal or homicidal tendencies may develop. In bad cases the milk and lochia are entirely suppressed, and the tongue and teeth become foul with sordes. The urine is scanty and high colored, and the bowels are generally constipated, though diarrhœa may exist.

The majority of cases result in recovery within a period of three months. After that time the chances of complete recovery are much lessened. Extreme vapidity and weakness of pulse points to a fatal issue.

Where family or personal history shows a liability to this trouble, efforts should at once be made to anticipate any untoward symptoms by means of good nursing, absolute quiet, judicious diet, etc. When the disease has appeared treatment must be mainly directed to keeping up patient's strength. The two things most needful are sufficient food and sleep. If patient refuses food enemata should be tried, and, if unsuccessful, forced feeding. A free purge should be given at the outset, and the bowels kept open during the attack. Sleep should be secured if necessary by means of chloral, hydrate or bromide of potash, or a combination of the two. Judicious nursing, with a cool and well ventilated room, are indispensable. When convalescence is established a change of air and scene, together with other means to build up the general health, are of value.

Dr. Z. B. Adams did not think that puerperal mania differed materially from ordinary acute mania. He had had some experience as assistant at the Taunton Asylum, and had always found that the refusal to take nourishment was a troublesome feature of many cases. The late Dr. Ray has suggested that if the patient be partially etherized she will eat without trouble. A singular fact in these cases is the tendency of patients whose character is irreproachable to use coarse and obscene language.

Dr. Henry M. Field read a paper on

THE TREATMENT OF CONSTIPATION.

(See page 290.)

Dr. Z. B. Adams said that he could add but little to Dr. Field's excellent paper. Next to cultivating the habit of regular evacuations he regarded kneading the bowels as the most pleasant and efficient means of relieving the constipation. Dr. Adams asked the opinion of the members in regard to the value of cascara sagrada.

Dr. Field considered cascara sagrada of value, and the solid extract as the most pleasant and efficient form of the remedy. It is a stimulant and acts like senna, though it produces less peristolsis. In many cases of constipation in feeble infants he regards it as the only safe and proper remedy.

Dr. L. F. Warner considered the paper a valuable one, but found in it no reference to what he considered "nature's physic," *i. e.*, healthy bile. He thought that the secretion of the liver should be attended to in all cases, and that mercury in some form was indicated in the treatment of all cases of constipation. He attributed the action of some purgatives, like elaterium, which produce copious watery discharges, not to any specific action upon the glandular system of the intestinal tract, but simply to increased endosmosis and exosmosis.

Dr. Wm. G. Wheeler said that most of the agents for the relief of constipation were not new, but that the practical application of the remedies had been improved. Some of the agents formerly much used but now practically discarded, such as cream of tartar, etc., are of great value. Idiosyncracy is an element in the treatment of every case which should not be overlooked. Dr. Wheeler described a case of a lady who from childhood had had but one evacuation of the bowels each month. In this case enormous dilatation of the colon existed, but the condition was somewhat improved by the use of aloin, nux vomica, and careful attention to diet and habit.

Dr. W. Thornton Parker spoke of the custom of some tribes of American Indians of using frequent and powerful purgatives. The alarming prevalence of consumption among them is probably due to the debility resulting from such hypercatharsis. Tobacco seems to act as a laxative in many cases. Dr. Parker stated that tartrate of soda in effervescent form is a laxative the excellence of which is not fully appreciated. The triturates of calomel and ipecac, made by Frazer & Co., are of great value, especially for children. The common American privy is the cause of many cases of constipation. They are at a distance from the house, are cold and inconvenient, and many women prefer to undergo the dangers and discomforts of constipation rather than endure the exposure incident to a visit to the privy.

Dr. W. O. Hunt said that the constipated habit was due primarily to a disregard of the calls of nature, so that the lower bowel in time became distended and failed to respond to the irritation of the fæcal mass. He had found the gluten suppositories, sold by the Health Food Co., of Boston, an efficient and agreeable agent in procuring an evacuation, and also in permanently relieving the constipation.

Dr. E. W. Cushing had used electricity in the form of the faradic current with advantage in the treatment of constipation. This agent is of special value in cases where the trouble is due to atomy of the muscular elements of the bowels. The tight waist worn by girls and the belt used by boys are pernicious in their effects. They interfere with the function of the bowels by preventing the passage of the fæces along the ascending colon. This interference may produce dilatation of the colon and thus cause a liability to typhlitis or perityphlitis. Suspenders are better and safer.

DR. PARKER did not think that the belt worn by men and boys could produce the ill effects described by Dr. Cushing. He had had experience in treating sailors and did not find them peculiarly liable to constipation, although they invariably wore a belt, or at least trowsers which were tight at the waist.

DR. CUSHING, in reply, said that the belt or tight waist of the sailors does not constrict the abdomen, but that their trowsers are suspended from the hips. This would explain their freedom from the bad effects of the ordinary belt.

DR. I. W. STARBIRD wished to bear hearty testimony to the value of cascara sagrada. He had used it with success in ninety-four cases, and considered it especially valuable in the treatment of children. In doses of fifteen drops of the fluid extract he had relieved cases in which natural evacuations had not occurred for six years.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Lack of Hospital Accommodation on the Guion Steamer "Arizona"—Medical Interference Resented by the Manager—A Doctor's Life at Sea—Department of Bacteriology, British Medical Association—Vaccination in Leicester.

A matter of great interest to the general public has recently been broached by a Dr. W. V. Barrè. It appears from a lengthy communication addressed by that gentleman to a medical paper, that he was employed as surgeon on board the Guion Atlantic liner, "Arizona," for three months. His last voyage in that vessel was commenced on May 15. Before sailing, he deemed it part of his duty to call the attention of the manager of the Guion line, to the want of proper hospital accommodation on board the "Arizona." It would appear that there are four hospitals on board that vessel. Two are situated on the main deck, in the "permanent steerage," and are only separated by a thin partition or bulkhead from the steerage itself. Being thus placed, it is clear these receptacles are useless for the accommodation of patients in event of infectious disease appearing on the ship. The remaining two "hospitals" are situated on the upper deck in the ships bows, under the "turtle back," which serves as a protection against heavy seas. These enclosures, Mr. Barrè admits, can be made to look presentable enough when the ship is in port. At sea, however, they are not only always soaking in bad weather but are only to be reached on such occasions at considerable personal risk, from the waves which sweep the open and intervening deck space. For seven or eight months of the year, these latter berths could not be used at all for hospital purposes, on account of the stormy weather. The climax of the details regarding these deck hospitals of the "Arizona," is reached, however, when Mr. Barrè tells they were commonly used as dog kennels, etc., that on one occasion a passenger's dog, stabled in one of them, was actually drowned during a voyage. What the fate of any unfortunate passenger would have been who might have chanced to be lying sick and helpless in such a berth, may perchance, require no great thought to discern. The large vessel just named, carries as many as 1,118 persons on a voyage. Yet, as far as her hospitals go, she is utterly unprovided with what is absolutely necessary accommodation in view of the possible contingencies and accidents of sea life.

The story told by Mr. Barrè goes on to relate how when he directed the attention of the Guion officials to the absence of needful ventilation in one of the steerages—which must prove a Black Hole of Calcutta in a small way if Mr. Barrè's details are correct—he was informed that he had no right to direct attention to any such defects. If the Board of Trade officials passed the ship for sea, argued the manager, that was all that was required. This opinion was given despite the fact that passengers who had occupied the ill-ventilated steerage had actually lodged a numerously signed protest against the fashion in which they were treated. Mr. Barrè found practical experience of the aphorism that the ways of reformers, like the ways of the wicked, are hard. He was dismissed from the Guion service ostensibly because he desired to make his ship comfortable and healthy. This is without doubt a by no means novel experience of ship surgeons, and the sooner Governments bestir themselves in the matter of supervising the medical department of the mercantile marine the better it will be for wayfarers by sea and surgeons anxious to do the duty which they are appointed to perform.

A second correspondent gives an equally important glimpse of the doctor's life at sea. Having reason to complain of the unsanitary condition of a ship, he consulted the captain before sending in a report to the owners. "You'll get yourself disliked," said the seaman. On this occasion, however, the report was sent and was acted upon, "but," adds the surgeon, "it might have been my dismissal from the service." Again, it appears that the ship surgeon is often by no means treated courteously in respect of ship regulations. A correspondent assures the public that in a well-known Atlantic company the surgeon is not allowed on the quarter deck after the first day or two, when the ladies are supposed to have overcome their seasickness. If, again, this statement is correct, it is obvious that there exists some singular anomaly in excluding from passengers' society an officer whose education and training have in nearly every case exceeded that of the captain himself. Up to the present the assertions of Mr. Barrè have been in no way disproved as to the method of suppressing sweetness and light on the medical side of the Guion establishment, or what the second correspondent has to say regarding the curious courtesies observed in the medical service of other lines. The matter calls for investigation, and until the accounts before the public are disproved, it appears that the position of a doctor at sea is susceptible in certain quarters at least of very considerable improvement.

One of the chief centres of interest at the recent meeting of the British Medical Association at Brighton

was a department of bacteriology specially arranged at the request of the President by Dr. Edgar Crookshank. The collection included apparatus and specimens illustrative of the processes of cultivating microbes, as well as a remarkable series of photographs, the result of a special investigation by Dr. Crookshank into microscopic photography as a means of pathological research, in some of which the growths were represented as if magnified 9,000 times. The cultivations, all prepared in England, were in gelatine, agar-agar, hay infusion, blood serum, bread paste and potatoes, the latter showing some fine growths of micrococcus prodigiosus, the ruddy color of which, when seen on food, has been at times regarded as a miraculous manifestation of blood stains. The collection also included the comma bacillus of Koch, being the bacillus associated with Asiatic cholera, as well as pneumococcus, the microbe associated with inflammation of the lungs, which, until the discovery of this microbe, was not suspected of being associated with parasitic infection. Another specimen was the foul blood in bees, the development of which had been fully worked out, whilst there were numerous specimens of the bacillus anthracis, well known in connection with M. Pasteur's experiments in the inoculation of sheep and cattle as a protection against splenic fever.

According to statistics just issued for the last six months, out of 2,500 children born in Leicester, only 300 were vaccinated. The authorities have therefore declined to apply further coercion, it being evident that the great bulk of the population are determined to resist the enforcement of vaccination. Dr. Julius Dreschfeld this year delivered the Bradshaw Lecture "On Diabetic Coma." G. O. M.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Development of Purulent Infection as a Sequel of Simple Non-Traumatic Pneumonia—An Optical Illusion—A Correction—Solution for Chapped or Sore Nipples.

Professor Jaccoud lately read a paper at the Academy of Sciences, the purport of which was to demonstrate the development of purulent infection, as a sequel of simple non-traumatic pneumonia. According to the author, the evolution in such a case is as follows: An individual in perfect health, attacked with acute pneumonia, the malady presents the characters and the course of marked simple pneumonia, nothing present to foresee the terrible incidents of which it may be the starting point. In ordinary cases, the acute phasis reaches its term, the fever ends, but the febrile defervescence is not followed by complete local repair, the remains more or less extensive of the pneumonic focus persist without any alteration. After an indefinite period during which the malady is stationary, the situation of the patient is aggravated, and he succumbs after having presented indubitable signs of a state of infection, or he dies suddenly without any previous aggravation of his condition. At the autopsy, one notices spots of suppuration in the pneumonic remains, and diffuse purulent foci, either in the limbs, or in the viscera. The patient having been seized with pneumonia in perfect health, the pneumonic remains having been during several days the only lesion present, it is certain, taking the accidents chronologically, that the suppuration of the lung is the starting point of the purulent foci, and of the general infection of the organism. Moreover, if these foci be submitted to microbian investigations, one can seize and place in evidence the intermediate agents between the primary and secondary lesions, for the same micro-organisms which are discovered in the suppurated spots of the lung, are found in the blood and in all the foci without exception. This pathological evolution, Professor Jaccoud observed them in two cases, the full history of which he submitted to the Academy, and the author thinks that both the cases sufficiently demonstrate the development of purulent infection following non-traumatic pneumonia, primarily and clearly normal at its onset. The pathogenic connection is revealed with complete evidence, the pneumonia, arrested in its resolution, merges into the formation of pus in the lung. From this initial focus, the pyogenic agents penetrate into the blood and determine, on a more or less greater number of points, spots of suppuration of the same nature. This is a confirmed type of pyohemia by microbian migration. There are in medical literature, examples of articular suppurations occurring in the course of, or following pneumonia, but these cases, which differ notably from those reported by M. Jaccoud, have been differently interpreted by the authors, and, consequently, their observations cannot in any way militate against the priority which the learned Professor claims for his demonstration.

It is known that when the eye looks for some time, in complete obscurity, at an immobile object of small diameter and feebly lighted, it very frequently happens that this object appears distinctly to move with a certain rapidity in a determined direction of the field of vision. This phenomenon, when it occurs, according to Dr. A. Charpentier, the author of the above remarks, is very striking, and nearly all the persons on whom he tried the experiment have realized the fact. This optical illusion is an appearance analogous to the transit of a shooting star, but less rapid. In a paper giving an account of his researches on this curious phenomenon, and which he communicated to the Academy of Sciences, Dr. Charpentier deduced the following conclusions: 1. The illusion really takes place in the fixed eye looking at a fixed object. 2. The diverse attitudes of the eye have no influence whatever on the phenomenon. 3. It is possible to provoke voluntarily the apparent displacement of the object in a determined direction. 4. The visual illusion, when it is not provoked by the observer, might perhaps be explained by inconscient efforts produced in the brain in a manner almost continuous and simultaneously with the phenomenon well known of the association of ideas. M. Charpentier, however, gives this explanation as a simple hypothesis, and leaves it to other investigators to solve the problem.

In my letter published in THE JOURNAL of July 10, in giving an account of a horny tumor of the scalp in a woman 51 years of age, I was erroneously informed that she had died. At the meeting of the Medical Society of Hospitals, on the 25th of June last, Dr. Vidal exhibited the horn, which was removed by Dr. Dubrandy. This horny tumor is said to be the largest on record that has been seen in a human subject. It was removed by elastic ligature. Since its removal it has been reproduced, and had then attained (June 25) a length of two centimetres. Dr. Dubrandy proposed to excise the portion of the scalp in which this production is implanted.

Dr. Pinard, a well known obstetrician, recommends the following solution in the treatment of chapped or sore nipples: Boric acid 6 grammes, distilled water 200 grammes. As soon as the cracks make their appearance, or even as soon as the patient feels the least sensitiveness in suckling her baby, the solution should be applied to the nipples and alveola by means of a piece of linen folded four times thick, over which is to be placed gummed or varnished silk, and the whole covered with a layer of cotton wool supported by a bandage. Dr. Pinard states that even a saturated solution of four per cent. may be employed without inconvenience. A. B.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

LUMBRICOIDS IN THE LARYNX.—A few weeks ago a girl was suffocated by a number of lumbricoid worms becoming impacted in the larynx, she having presumably vomited them.

PROFESSOR FERD. RITTER VON ARLT, the distinguished ophthalmologist of Vienna, is said to be suffering from gangrenous thrombosis of the leg.

VIENNA MEDICAL FACULTY.—It is said that after the beginning of next year the vacation courses will be discontinued.

ADAMS COUNTY, OHIO, MEDICAL SOCIETY.—Quite a number of the physicians of Adams County, Ohio, met in West Union, on June 17, and organized the "Adams County Medical Society" by the election of the following officers: President, Dr. David Coleman; Vice-President, Dr. C. W. Salisbury; Secretary, Dr. J. W. Bunn; Treasurer, Dr. C. S. Corboy. The next meeting will be Oct. 21, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 28, 1886, TO SEPTEMBER 3, 1886.

Capt. L. W. Crampton, Asst. Surgeon, relieved from further duty at Bellevue Rifle Range and granted leave of absence for one month, to take effect before rejoining his proper station (Ft. Bridger, Wyo.). (S. O. 108, Dept. of the Platte, Aug. 28, 1886.)

First Lieut. L. Wood, Asst. Surgeon (recently appointed), ordered to report by letter to the commanding general Dept. of Arizona for assignment to duty. (S. O. 202, A. G. O., Aug. 31, 1886.)

First Lieut. Freeman V. Walker, Asst. Surgeon (recently appointed), to report in person to the commanding general Dept. of the East for assignment to duty. (S. O. 203, c. s., A. G. O.)

First. Lieut. Chas. F. Mason, Asst. Surgeon, relieved from duty in Dept. of the East and assigned to duty in Dept. of Arizona. (S. O. 203, A. G. O., Sept. 1, 1886.)

First Lieut. Chas. F. Mason, Asst. Surgeon, relieved from duty in Dept. of the East and assigned to duty in Dept. of Arizona. (S. O. 203, A. G. O., Sept. 1, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING SEPTEMBER 8, 1886.

Dickson, S. H., P. A. Surgeon, detached from the Naval Academy, Oct. 1, 1886, and ordered to Navy Yard, Washington.

Lippincott, J. G., P. A. Surgeon, ordered to Naval Academy, Oct. 1.

Shippen, E., Medical Director, detached from Naval Hospital, Philadelphia, and ordered to attend officers of the Navy and Marine Corps at Philadelphia not otherwise provided with medical aid.

Hord, Wm. T., Medical Director, detached from Examining and Retiring Boards at Washington, Oct. 5, and ordered to Naval Hospital, Philadelphia, Pa.

Dean, R. C., Medical Director, ordered to duty as member of Examining and Retiring Boards at Washington, Oct. 5, 1886.

Bransford, J. F., Surgeon, detached from U. S. S. "Iroquois," and ordered to Naval Hospital, New York.

Hall, C. H. H., P. A. Surgeon, detached from Naval Hospital, New York, and ordered to Naval Hospital, Yokohama, per steamer of 21st inst.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDED SEPTEMBER 4, 1886.

Bailhache, P. H., Surgeon, to proceed to Cape Charles Quarantine as Inspector. Aug. 27, 1886.

Fessenden, C. S. D., Surgeon, granted leave of absence for thirty days. Aug. 30, 1886.

Godfrey, John, Surgeon, to proceed to Biloxi, Miss., and investigate alleged yellow fever cases. Sept. 1, 1886.

Irwin, Fairfax, P. A. Surgeon, granted leave of absence for thirty days. Sept. 2, 1886.

CORRIGENDUM.

In THE JOURNAL of August 28, p. 251, in the prescription of potassium chloride, for S. 3vi every hour, read "3ss every hour."

THE
Journal of the American Medical Association.
EDITED FOR THE ASSOCIATION BY N. S. DAVIS.
PUBLISHED WEEKLY.

Vol. VII. CHICAGO, SEPTEMBER 18, 1886. No. 12.

ORIGINAL ARTICLES.

VENOUS BLOOD TUMORS OF THE CRANIUM

in Communication with the Intra-Cranial Venous Circulation, Especially the Sinuses of the Dura Mater.[1]

BY WM. M. MASTIN, M.D.,
OF MOBILE, ALA.

The following propositions are submitted as the result of my study of this class of cranial venous tumors:

1. Cranial venous blood tumors communicating with the dural circulation are to be classified into three divisions, namely: the congenital, spontaneous, and traumatic.

2. These classes are divided, upon both anatomical and pathological grounds, into two species or varieties: *a*, the diffused, produced by a perforation of the cranial plates and the wall of the subjacent sinus, resulting in a limited extravasation of blood beneath the scalp and thus forming a blood-cyst in direct or immediate communication with the affected sinus; and *b*, the venous or vascular, in which the tumor is directly formed at the expense of the venous coats, and includes in its scope the sinuses, the venæ emissoria, and the diploic vessels.

3. The venous type is the commonest in point of occurrence, and of this type, varicose involvement of the emissory vein is the most frequent form; whilst the diffused is the rarest of all the varieties.

4. The diffused variety is especially characteristic of the spontaneous and traumatic groups. The venous or vascular type occurs most frequently in the congenital class, but at the same time is often met with in the spontaneous division.

5. The medium of communication with the intracranial circulation is, in the very large majority of instances, represented by the superior longitudinal sinus, particularly its central and posterior portions. The emissoria Santorini most often implicated are, probably, the superior or posterior parietal emissories, which pair, also, are the most constant and uniform in their existence. When the diploë is involved the frontal region is the usual seat—no instance of a similar occipital formation having been observed.

6. In a causal relation, some morbid action in the venous walls is notably prominent in the congenital class; in the spontaneous group, atrophic or rarefying osteitis ranks first as a cause, and venous disease secondly; and in the traumatic division, direct injury, which nearly always means fracture, is the only etiological factor.

7. Palliative measures for retarding or arresting the progress of the growth, and certain forms of compression intended to act as a curative agent, are useless applications—the latter, in addition, being capable of producing alarming head symptoms, and hence may be harmful.

8. General surgical interference is not called for, because the history, nature, and progress of the lesion is opposed to indiscriminate operation, being of that character to render such treatment unnecessary. When, however, operation is deemed expedient or is demanded, the following methods seem to be open for adoption:

First, if the growth be either of the diffused type, or that form consisting of a varix-sinus, exposure and ligation of the pedicle (if such exist), or, if necessary, deligation of the sinus in its course, the trephine being boldly employed to furnish requisite space for the necessary attending manipulation. The lateral ligature and suture, when applicable, are preferred to complete ligation.

Second, if the tumor be composed of varicose emissory vessels, or, perhaps, of diploic dilatations, either electro-puncture or strangulation of the base are justifiable procedures, but preference is given to electro-puncture.

Since the discussion of the subject of cranial venous blood tumors communicating with the cerebral circulation, particularly through the medium of the dural sinuses, in an article which appeared in the April and May issues of the *Annals of Surgery* for 1885, I have succeeded in collecting so much additional data relative to this important pathological formation, that I have decided to embody the results of my entire research in a second and more complete monograph.

This has seemed proper and desirable not only from the natural surgical interest which must attend all investigations and compilations leading to the clearer elucidation of an affection which, in both actual occurrence and literary records, constitutes a class of comparatively rare lesions, but also on account of the necessity of a very material change in some of the conclusions and deductions arrived at in my preceding brochure, which this increased information now renders obligatory. It is to this enlarged

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

and more comprehensive examination of the subject that I desire to invite your attention.

With the simple explanation just made I shall not attempt to apologize for the numerous repetitions and dry details, especially in the references to clinical histories, which compose a certain part of these remarks, and will remain content in the belief that the topic possesses attraction equally great for others as for myself. The infrequency of all reference to this interesting and uncommon form of sanguineous tumor in recent or modern surgical treatises, is a matter of considerable surprise and comment. Notwithstanding the occasional mention of the lesion, with the moderate number of clinical records which are to be found scattered here and there throughout the broad field of surgical literature, to say nothing of the manifest inherent importance of the formation, together with its relation to general surgery, I am unacquainted with more than a half-dozen works, among the vast profusion of surgical writings which have appeared subsequent to twenty years ago, that make the slightest allusion to the subject,—and especially does this observation obtain of American and English publications.

As representing the most prominent among those authors referring to the malady within this period, may be named MM. Fallin and Duplay, who, in their admirable treatise on Pathology (*Traité Élémentaire de Pathologie Externe*, Paris, 1868–9), devote a short but concise and instructive section to a consideration of the subject; Legouest and Servier in their valuable article on the *Cranium* contained in the *Dictionnaire Encyclopédique des Sciences Médicales* (1e Série, Paris, 1879), contribute an important and comprehensive chapter on these sanguineous tumors; Bergmann (*Deutsche Chirurgie*, 1880); and Dr. Gross (*System of Surgery*, Phila., 1882), who notices the lesion in a brief paragraph, and without the addition of any special or original observations.

Prior to the date specified, however, surgical annals are not quite so barren of such allusions, as is amply indicated by the array of facts and clinical cases presently to be detailed, together with the bibliographical collection appended to this essay, and the most important of which are the contributions of Burns, Demme, Dupont, Stromeyer, Duplay, Verneuil, Jules Dubois, Middesdorff, Burchard, Dufour, Hecker, Michaud, Chassaignac, Melchiori, Azam, and Hutin, to which publications we are largely indebted for much of the knowledge that we possess concerning these types of cranial blood-tumors.

It is of interest to note, also, the various apellations given to the affection,—among other less distinctive terms, it being described under the several designations of: *Varix verus cirsoideus* and *varix verus circumscriptus; fistule osteo-vasculaire; erectile tumors of the skull communicating with the superior longitudinal sinus; sinus pericranii; varix sinus verus extra-cranium congenitalis; "venous tumors" of the cranial bones; varix spurius circumscriptus venæ diploicæ frontalis; sanguineous tumors of the vault of the cranium in communication with the intra-cranial venous circulation; sanguineous herniæ of the vault of the skull by communication, through openings in the bone, of the meningeal vessels with the exterior integument; varicose veins or venous varicosities of the skull; a new form of tumor of the vault of the cranium, produced by the blood in communication with the intra-cranial venous circulation; extra-cranial venous tumors connecting with the intra-cranial venous circulation; subpericranial venous tumors;* and *reducible sanguineous tumors of the vault of the cranium.* These titles were based upon some salient or distinguishing feature, and at the same time they furnish a fair insight into the individual opinions entertained of the pathology and origin of these formations by the authors respectively adopting them.

Recognizing the scattered and, under existing circumstances, often inaccessible condition of the literature, it has seemed particnlarly desirable that some attempt be made to gather these fragments together. Therefore, having succeeded in collecting a sufficient, if not the larger, portion of these fugitive contributions, from which, it is believed, some intelligent and decided inferences can be drawn; or, at least, enough to allow generalization, I shall endeavor in this second article to lay the collated material before the profession in a more compact and tangible form.

Classification.—Considering all the pathologico-anatomical facts, combined with the various hypotheses relative to the subject, to which I shall advert hereafter, these tumors should be divided, on account of the period and method of their formation, into the following classes:

I. Congenital.
II. Spontaneous.
III. Traumatic, or cases resulting from *direct* traumatism.

It appears warrantable, also, both from the etiology and special structures involved in each, to make two divisions of these three classes or groups, namely:

1. The Simple or Diffused.
2. The Venous or Vascular.

1. The *simple* or *diffused* comprises those cases in which the blood effusion takes place immediately beneath one or all of the scalp layers—dissecting up these tissues and thus forming the tumor-walls—and which may be caused by spontaneous or other perforation of the cranial parietes with opening into the sinus, as in rarefying osteitis, and from many traumatisms.

2. The second division, the *venous* or *vascular*, covers those cases formed through direct implication of or morbid action in the venous coats, the walls of a sinus, an emissory vessel, diploë vein, as in ectasia of the sinus wall through a normal or abnormal skull perforation, in circumscribed and multiple varicosities and dilatations of the venæ emissoria, in ruptures of these emissory veins, and in dilatations of the diploeic vessels with loss of osseous substance.

These two divisions again admit of still another division, dependent upon the particular features of the tumor, that is:

1. The cyst or pouch variety, which may be further subdivided into:
(a) Fusiform,
(b) Sacciform,
(c) False, and

2. The varicose or erectile variety.[1]

1. The *cyst* or *pouch* variety is that form of the lesion which is characterized by the formation of a simple (seldom more than one) cyst or cavity; and therefore includes circumscribed dilatation of a vena emissorium (fusiform); an ectasia or hernia of a sinus, and dilatation of a diploic vein (sacciform); perforation of the skull and sinus followed by immediate extravasation of blood beneath one or more of the scalp layers, and rupture of an emissory vein (false).

2. The *varicose* or *erectile* variety is composed of tortuous and varicose veins—principally the emissoria Santorini—in fine or gross bundles, bound together by connective tissue; and, occasionally, of a structure resembling true erectile or cavernous tissue.

Each of these several divisions and varieties will receive additional consideration in the subsequent pages.

CLINICAL RECORDS,[2] WITH COMMENTS.

A separate review of every individual case of the number collected, although requiring what would appear to be a needless detail and repetition, is really essential in an extended examination of this lesion, especially because of the several varieties of venous blood tumors communicating with the intra-cranial circulation, each of which appears to demand liberal illustration. It shall be my endeavor, however, to make this notice as brief and condensed as the proper and connected presentation of the histories will permit, with a correct appreciation of the different salient and distinctive points which they offer.

I. CONGENITAL CLASS.

The earliest record of any case belonging to the congenital group which has come to my knowledge, is that occurring in the practice of Moreau, and related by M. Pelletau (*Clinique Chirurgicale*, t. 11, p. 76, Paris, 1810) as follows:

"A youth, 15 years of age, had located on upper part of forehead a congenital swelling the size of a pigeon-egg. It became larger and also of a bluish color when he stooped over the table at work, but in the morning upon first awakening it was much smaller and without discoloration.

"M. Moreau divided the tumor centrally, and packed the profusely bleeding wound with lint, but this failing to arrest the hæmorrhage, the surface of the wound was painted with butter of antimony, requiring very many of the cauterizations to control the escape of blood. Now, however, high fever, headache, convulsion, and paralysis of the corresponding half of the body followed, and finally death ensued on the fourth day.

"At the post-mortem examination were found three holes in the frontal bone through which enlarged and dilated veins passed on into the superior longitudinal sinus, thus placing the external varicose swelling in communication with the intra-cranial venous circulation. For a large area around these perforations the dura mater was inflamed and covered with pus."

Bruns, who also details this observation in full, speaks of it under the heading of varix verus cirsoideus.

The next case in point of date is that mentioned by Busch[3] in *Heidelberger Klinische Annalen*, t. 11, p. 249, 1876:

"During the accouchement of a patient, after the discharge of the waters (which were thick, greenish and fetid), and whilst head still at superior strait, a large, fluctuating tumor was distinguished on the child's head. The child was still-born; male; weight seven lbs.; skin detached and macerated, and limbs flaccid, showing conclusively that death had taken place some time prior to labor.

On the head there was a rather large, fluctuating tumor, of bluish color, which in length extended from the external occipital protuberance to middle of the saggital suture, and in the other direction from the point of ossification of one parietal bone to corresponding point on the opposite side, and projected the most in the region of the small fontanelle. All the cranial bones were very mobile, and that which deserves especial note, from an etiological point of view, was the absence of a defined and prominent ring around the border of the tumor. The tumor was opened by a long transverse incision, extending from right to left, which discharged a quantity of dark-colored, viscous blood, of an offensive odor. About two ounces was collected. This fluid was situated between the bones of the skull and the pericranium, and a careful examination of the line of incision showed that several vessels extending across the superior longitudinal sinus had been divided, and that the sinus was in communication with the tumor. The cranial aponeurosis over the site of the small fontanelle was thick and soft, being infiltrated with a gelatinous lymph; this thickness becoming less as the borders of the tumor were approached. This thickness, also, was easily distinguishable from an ordinary tumor of the head. There was no extravasation either in the brain or dura mater, although the cerebral vessels were engorged with blood."

It should be remarked that in Pigné's account of this case of Busch's the lesion is regarded of traumatic origin, being due to the traction and pressure of the forceps employed in the delivery. But this, evidently, is erroneous, for the description given by Busch is so clear and explicit on this point that the intra-uterine death of the child, several days previous to time of labor, is not to be questioned; and hence I must consider the case as one of congenital formation. Dupont also regards it as congenital.

M. Chassaignac (*Thèse sur les tumeurs de la voûte du Crâne*, p. 125, 1848) mentions having heard Professor P. Bérard (senior) relate, during a course of lectures on anatomy, delivered in 1831 or 1832, the history of an infant in whom there was a varicose dilatation communicating with the superior longitud-

[1] The varicose or erectile variety is not so distinctive of this class of tumors as the other forms, since it is very closely allied to the simple or superficial subcutaneous venous erectile tumors of the scalp.

[2] For several of these references I must acknowledge my indebtedness to Dr. William Browning, of New York, who very kindly directed my attention to them after the publication of my first paper.

[3] Reported also in my previous paper.

inal sinus, and which swelled considerably when the child cried or made any exertion.

This is a simple statement without any careful or decided clinical details, and nothing to indicate its manner of communication with the intra-cranial circulation; but there seems to be no reasonable doubt of its being congenital in formation, and composed, probably, of varicose venæ emissoria.

The case of Flint is thus briefly given by Pigné, Chassaignac, Dupont, and others:

"There was found in the occipital region of an infant, several days old, a tumor of considerable size. He opened it. It contained venous blood, which flowed out in such quantities that the infant speedily perished from hæmorrhage. Examination showed this tumor to communicate with the longitudinal sinus."

From the symptoms presented, and in the absence of contradictory data, this case may be regarded as an ectasia or hernia of the sinus through the posterior fontanelle.

Mersemann records (*Observateur Médicale Belge*, 1834) an example of considerable interest. Bruns also mentions this case, and includes with it that of Moreau's under the head of varix verus cirsoideus, as before referred to:

"At birth a well-formed child had over posterior fontanelle a swelling the size of a pigeon egg, which in the course of six weeks had increased to three times that size. The pedicle was almost as large as the swelling itself; the skin covering it was thickened and wrinkled, although through it could be felt the fontanelle and edges of parietal and occipital bones. The tumor was uneven; no pulsation; color and temperature normal; but it became tense and bluish or even blackish-blue when child made any exertion whereby the blood return from head was interrupted. but not increased in size. Palliation being useless, as the growth continued to increase, and as the mother insisted upon its removal, strangulation of the tumor was undertaken. Hence, whilst child was at the breast, a ligature the thickness of a writing quill was adjusted about the base. Upon the first tightening the child screamed lustily and struggled with hands and feet, but as soon as it was fully tied the infant became quiet, sucked, and fell asleep without indicating further pain. Next day child equally well—the swelling remaining same in size and color. On third day the strangulation had increased without any bad effect, the surface being cold and bluish, with fetid discharge from around the ligature. By the fourteenth day, after repeated tightenings of the ligature, the pedicle was reduced to size of a swan's quill, and, after applying a second ligature thereto, the tumor was ablated without a drop of hæmorrhage. There was now left a simple sore, of good appearance, at base of which the fontanelle could be felt, and in three days more the second ligature separated and the ulcer healed. On opening the tumor there was disclosed a mass of areolar tissue containing a bunch of greatly thickened veins in which were several spherical enlargements (dilatations). The scalp was quite thick, but beginning to shrink."

Stromeyer (Ueber Sinus Pericranii, *Deutsche Klinik*, Bd. 11, S. 160; April 13, 1850) reports a case observed by Francke. This is classed by Bruns under the title of varix verus circumscriptus:

"Christian Brandt, a soldier, native of Wenelsfleth, 20 years old, was born with a swelling over left eye, for the dissipation of which medical aid was unavailing. This swelling, according to report, is now, proportionately, of same dimensions as in early life; extends from the glabella two inches to the left, and from the arcus supercilii to three lines above hair margin, covering about four inches square, and when distended is elevated about one inch. When patient is at rest the swelling does not stand out, but exertion, stooping, coughing, sneezing, compression of jugulars, warmth, and all conditions causing the blood to flow to head, or preventing its return, cause the swelling to fill, become tense, and elastic like a distended gland-abscess. When flaccid the skin pale like the walls of a completely emptied abscess. On outer edge of arcus supercilii is felt, through the swelling, a depression in frontal bone, and in this depression towards the external side there exists, apparently, a pretty large foramen. The length of depression is three inches, breadth one and a half to three lines. No pain except when he wears a heavy head-gear, or when making great exertion, under which circumstances there arises swimming of head and a feeling as if tumor would burst. Color of skin unchanged, even under maximum distension. Easily emptied by pressure, and refills in one-half minute. When distended the tumor is equally elastic over entire surface, and clearly outlined. Curative treatment not employed because considered useless and dangerous."

M. Verneuil presented, for M. Michaud, of Louvain, to the Société de Chirurgie, a pathologico-anatomical specimen with this history (Tumeurs Erectile du Crâne Communiquant avec le Sinus longitudinal Supérior, *L'Union Médicale*, 8 Février, 11 Série, t. 1, p. 254, 1859):

"A young man 28 years old with an erectile tumor of superior eyelid. This swelling was without bruit or pulsation; its volume augmented upon compression of jugular vein or when patient stoops forward, but diminishes when head is erect. It is irreducible, and does not present characters pointing to communication with interior of skull; patient experiences sharp pains in tumor, and vision cut off by drooping of lid. Congenital in origin. Operation by cauterization with red-hot iron applied to three points. No trouble at first, but on seventeenth day patient seized with facial erysipelas, which was epidemic, followed by meningitis and death. A few days after operation the patient announced that he had another similar tumor on his head. This presented exactly same characteristics as first one. At the autopsy each tumor showed a cavernous tissue like ordinary erectile tumors; under them the bone was perforated by a multitude of little apertures which gave passage to the vessels penetrating into the interior of skull, thus putting each tumor into communication with the superior longitudinal sinus."

Middeldorff gives the the history of the subjoined

case[4] in a private letter to M. Dupont (*Essai sur un Nouveau genre de tumeurs de la voûte du Crâne formées par du sang en Communication avec la Circulation Veineuse intra-Crânienne*, p. 26, Paris, 1858):

"Matilda H., æt. 9 years, daughter of a peasant living at Carlowitz, near Breslau; well nourished and developed. From birth there existed on her forehead, a little to left of median line, a tumor covered by the hairy scalp. It is round, smooth, and does not pulsate. Shortly after birth it was the size of a cherry, but now (1851) it presents a diameter of an inch and a half, and one-quarter inch thick. Offers different degrees of tension—one time flaccid, and then again much distended, but there is always a little fluctuation. Bending the head forwards toward the ground, etc., causes it to swell up; deep inspirations make it sink slightly; it quickly and without difficulty disappears under continued pressure, and this does not produce the least symptom of cerebral compression. After reduction the base of the tumor is found to be circumscribed by an edge or ridge three-quarters of a line deep, denticulated, and which felt to be bony by the exploring needle. The base or floor of the tumor is formed by the cranial vault, almost flat, and without the sensation of any opening penetrating it, and is covered seemingly by a thin membrane. There are no cords or filaments to be felt in the tumor cavity except near the skin and hair line, where an ovoid cartilaginous button is perceptible, which is movable and about size of a grain of rice.

"In 1856, at my clinic, I examined this tumor a second time, but, with the exception of being a little larger, it presented the same symptoms; the girl, also, continuing in good health. Pressure upon the tumor, after encircling it with an ivory ring which closely fitted its base, and pressing the ring down sufficiently to cut off the skin circulation, also causes it to disappear, thus demonstrating conclusively that the blood flows from the direction of the osseous base, and not from circumference vessels."

In the Bullétin de la Société de Chirurgie (t. iv, p. 414, *et suiv*,) M. Verneuil reports the following case[5] of this malady:

"A young girl, aged 17 years, of a strong constitution and good health, presented herself to me, in 1854, for advice concerning a tumor on the forehead which had existed from infancy. She had some indefinite recollection of a blow received in early life, but it was entirely too vague to be relied on. No evidence of hereditary trouble in any of the family, and the tumor is, evidently, of congenital origin. The symptoms are as follows: Fluctuating, soft, and round; painless; ordinarily it is of the volume of a large nut when she leans forward, and is situated on the right frontal protuberance. The skull is unaltered in consistency or color, and no vascularity of the surrounding parts. Pressure causes it to sink and disappear entirely, and after reduction one can definitely determine that there is no appreciable alteration of the bone, and only a little circular ridge around it (its limiting boundary) is perceptible. This is rather resistant. The tumor is easily reduced by pressure, which must be steadily applied, and by this manipulation the sensation of a pouch partially filled with fluid, which empties itself, is experienced. The tumor bulges out under the influence of exertion and emotions, but there is neither bruit nor pulsation; and, again, cough does not affect it. When the head is lowered the tumor becomes voluminous, with the dimensions of 3 cm. in diameter by 1 cm. deep. In the dorsal decubitus the tumor attains a very large size, but it is largest when she sits in the sewing position with the head inclining forward. During the menstrual epochs, however, the tumor assumes, perhaps, its greatest volume, and at these periods she suffers from decided headache, but to this she is, at any rate, subject.

"Later a cure took place, or, at least, the tumor subsided after a very prolonged examination with repeated palpations to which she was subjected at the Surgical Society."

M. Verneuil announces the favorable termination of this case with caution and reserve, because of his inability to verify the permanence of the cure by another examination at a more remote date; as, immediately after the subsidence of the swelling, she disappeared, and was not again seen.

Case of M. Foncteau (Note pour servir à l' histoire des Kystes des Enfants Nouveau-nés; *Gazette Médicale de Paris*, November 2, 111 Série, t. xvi, page 695, 1861):

"A congenital tumor of the cranium, pediculated, situated over the posterior fontanelle. It was of a blackish color, fluctuating, and was divided by a vertical furrow into two unequal lakes. Greatest diameter was transverse; circumference measured around largest part O^m, 40, and at smallest part, O^m, 30; pedicle was O^m, 12. The pedicle was strangulated by a thread, and tumor punctured in right half, from which 300 grammes of a serous liquid flowed out, but only the right half was emptied thereby. Another puncture in left side gave exit to about an equal quantity of a sanguinous fluid. The pouch was not tardy in refilling, and by the following morning it had acquired about one-half of its former volume; but at the same time the child was steadily sickening; lips and surface pale. Death followed. The autopsy demonstrated a communication between the superior longitudinal sinus large enough to admit the little finger. In the principal cavity floated a little accessory pouch, the orifice of which was distinct from the main tumor opening. On right wall of large cavity there existed another opening, of oval shape, with a sphincter-like edge, communicating with a third cyst. This is the cavity from which only the serum flowed. The pouches emptied after death furnished 255 grammes of blood, which, added to the 225 grammes extracted by the puncture, gives a mass of 480 grammes taken from the child in twenty-four hours, which is amply sufficient to explain its death. The pedicle was only incompletely strangulated. The little pouch in the middle was formed, apparently, of the vascular serous membrane. The two other compartments were lined with a very vascular serous membrane, easily detached from the skin by simple traction, and is continuous with the serous membrane

[4] Reported also in my previous paper.
[5] Reported also in my previous paper.

of the cerebral sinus through the occipital fontanelle. This, then, is a blood-cyst formed by a hernia of the serous membrane of the cerebral sinus through the unclosed posterior fontanelle."

Under the designation of "Varix Sinus Verus Extra Cranium Congenitalis," Herman Demme describes elaborately in his excellent monograph, "Uber Extracranielle mit den Sinus Duræ Matris communicirende Blutcysten" (Illustrated, *Virchow's Archives*, Bd. 23, fol. 48, 1862), a marked example, of which the following is a condensation:

"In February, 1861, I saw the infant son of W., a locksmith of Berne, nine months old, who was born with a swelling on the head, which had resisted all medical treatment. Other physicians had declared it cystic, and therefore benign, but the father was very uneasy on account of having previously lost a child with a very similar growth on back of head. Child's health is poor, and often in his sleep he cries out and carries hand to head as if in pain. Pressure upon the swelling always makes him restless. He is a pale, weakly boy, with ricketty thorax and large abdomen. Head rather small, covered with thick blonde hair, and located thereon in middle of sagittal suture, is a swelling the size of a small apple. It is roundish, upper surface smooth, its outer covering being the scalp, somewhat pale, and sparingly covered with hair. No vessels visible; by transmitted light tumor is non-transparent; resistance equal in all portions; fluctuation in some places, with firmer masses in others. Continuous pressure gradually reduces swelling only in part on account of these firm masses—pressure, at the same time, causing face of child to become livid. Several large veins over upper eye-lid are distinct. Crying, and compression of jugular veins caused tumor to increase in volume and expansion and tension of walls, with a blue color. No essential connection with extra-cranial veins could be demonstrated, circular compression around base of tumor producing no apparent change. No arterial pulsation, though there was a feeble and doubtful undulation movement. This was a synchronous rising and falling upon inspiration and expiration, which was more positively seen by the excursions of an exploring needle inserted therein; and auscultation discovered occasionally and irregularly a rustling and whirring sound. Withdrawal of needle was followed by a few drops of dark-red blood. Base broad and without pedicle or constriction; no appreciable alteration of bone surface, and hence no perforation of skull could be perceived. Electro-puncture would have been employed, but the instrument was not available, and hence non-interference advised.

"May, 1861, death from cholera infantum. Autopsy: Body emaciated. The swelling, which is smaller (on account of absence of circulation), was incised lengthwise, discharging a dark bloody mass. Interior walls covered by different colored coagulum laminæ, both firm and soft, as in an aneurismal sac. In the coagulum covering the base is a funnel-shaped depression into which a fine probe readily passes through an opening therein, for 1½ inches into the cranial cavity. Removing the cranial vault with the cyst and that portion of dura mater which is adherent to the bone, the brain is found to be anæmic. The superior longitudinal sinus is distended and filled with coagulum, and is considerably dilated at point corresponding to the extra-cranial cyst, and in which the point of the probe, introduced through the cyst, is plainly felt. In right wall of sinus near its base there is discovered a long oval spacious opening, through which the probe projects. Old blood clot, size of a pea, found in cerebellum. The external cyst-wall consists of the normal scalp; and a closer examination of the other layers forming its walls demonstrated seemingly the fact that it was formed by a hernia of the sinus walls through the osseous opening. The scalp moveable and easily raised, and pulling this forward showed that there was a hollow pedicle to the tumor connecting the sinus with the cyst cavity. The pericranium did not enter into the composition of the cyst-coverings, but was intimately attached to the circumference of the bone opening and the pedicle. The bone was somewhat thinned throughout the space occupied by the tumor, more transparent and in a state of rarefaction. The walls of the superior longitudinal sinus were thickened, especially the fibrous elements, but otherwise little altered."

Demme also refers to a similar case, related by Bardeleben at a meeting of the Naturalists, in Speyer. This was in the person of an adult in whom the cyst probably communicated with the sinus longitudinalis. In its treatment, Bardeleben successfully practiced electro-puncture.

Finally, the last instance which I have to mention in the Congenital group is that of Dr. Acland, of Oxford, which is contained in a paper entitled *Cases Illustrating the Formation of Morbid Growths, Deposits, Tumors, Cysts, etc., in Connection with the Brain and Spinal Cord, and their Investing Membranes*, by John W. Ogle, M.D. (*British and Foreign Medico-Chirurgical Review*, vol. xxxvi, p. 212, July, 1865):

"*Case 196.—Blood-cyst beneath the Scalp, Communicating with the Torcular Herophili.*—The patient was a child, age three years, who died of chronic hydrocephalus.

"*Post-mortem.*—Cranium: At the posterior part of the cranium, beneath the integument, was a venous capsule communicating as described below, with the cranial cavity. The brain was greatly enlarged, and the anterior horn of one of the lateral ventricles was distended with serum. The occipital tuberosity was perforated by a foramen, through which a tube of fibrous tissue passed from the torcular herophili, admitting the blood into the subcutaneous venous capsule mentioned as existing at the back of the head."

The morbid preparation illustrating the above history is in the Pathological Department of the New Museum, at Oxford.

II.—SPONTANEOUS CLASS.

The first example of the Spontaneous Class which claims recognition on the score of priority, is from a specimen belonging to the anatomist Jacobi (or Jakobi), and described by Beikert (or Beyckert) in

his *Dissertat, De Nervis Duræ Matris, Argentorati*, 1772, S. 33; but concerning which all minute and descriptive data are wanting:

"It was a case where a large swelling was located in the occiput, which was composed of a cyst filled with coagulum. Close examination demonstrated the existence of a rather long hole in the os occipitis through which the superior longitudinal sinus protruded as a hernia under the scalp; and this, from the examination of the preparation, is, without doubt, the result of a secondary perforation, and not the congenital protruding of the sinus through a fontanelle."

Several authors refer to this example as an instance of congenital hernia of the sinus finding exit through the posterior fontanelle; but, as both Bruno and Demme (from the latter of whom I get my information, not being able to secure the original dissertation of Beikert's) claim a secondary origin, and, therefore, a probable non-traumatic perforation of the skull arising subsequent to birth, I have felt warranted in placing it in this division.

In the *Gazetta Medica di Milano*, Nro. 1, 1843, is found the subjoined case by Giovanni Melchiori:

"In a girl, 14 years old, there was first discovered during an attack of fever with severe headache, a swelling on left side of head, beginning one inch above mastoid process and extending up to middle of parietal basse. Transverse diameter below was 12 lines, above, 9 lines; thickness below, 8 lines, above, 3 lines. Surface convex and smooth, but skin thinned in several localities, and of a transparent blue; base not movable; temperature normal; not sensitive to touch; consistency uniformly soft. Patient complains of a deep continued pain, accompanied by a pulsation extending into ear, but ceases when lower part of swelling is compressed. Later there was observed at lower third a simple rising and falling of the tumor synchronous with cardiac pulsations, with a blowing murmur. After death the swelling disappeared, there being in place thereof a network of empty veins, varying from the size of a thread to a pigeon quill, which intercommunicated freely, and finally ended in a common trunk the thickness of a goose quill. This passed through the galea aponeurotica capitis at lower and posterior edge of the parietal bone, piercing the bone, and finally opening into the transverse sinus, where it lies on inner surface of the temporal bone. There was meningitis, and all the cranial sinuses were filled with partially suppurating clots, although there was no disease of the sinus walls."

The following record of Hecker (Varix Spurius Circumscriptus Venæ diploicæ frontalis, etc. Erfahrungen und Abhandlungen im Gebiete der Chirurgie und Augenheilkunde, Ss. 151–155, with illustrations, Erlangen, 1845), especially illustrates the theory of slight traumatism in the production of osseous atrophy:

"H. G., æt. 34 years; a factory hand; bileo-sanguineous temperament; of habitual good health, excepting several attacks of pneumonia; had on right side of forehead a distinctly fluctuating swelling, appearing gradually after certain movements and exertions, and which could be made to appear and disappear rapidly. It arose during the first year of life, after repeated blows received on head against a wooden floor in learning to walk. No effect resulted from remedies applied at that time. Notwithstanding the swelling increased with years the patient refused medical aid, because he had become accustomed to the insignificant annoyance which it caused— there being not the slightest mental trouble. For many years it remained *in statu quo*. In 1834 he received a stab in tumor with a pitchfork. Severe hæmorrhage lasting for half an hour followed, but stopped spontaneously; and with the exception of remaining scar there resulted no inconvenience. When fully distended the skin covering becomes dark blue, with little spots of capillary enlargement over surface; it is also painless on pressure, somewhat tense, plainly fluctuating, and can be caused to disappear at once by light pressure of the hand. No bruit. Transverse diameter of the fully distended tumor is three and one-fourth inches; vertical diameter three inches; circumference at base eight inches; height two inches. It occupies almost entire right side of forehead, slightly encroaching upon left side, and consists of two parts, one within the other as it were, irregularly separated by a circular shallow depression; the larger or main tumor being size of an apple, and of blue color; the smaller is less prominent and of normal color, and gradually passes out into surrounding healthy skin. All movements interfering with return of venous blood from the head cause the growth to enlarge, as coughing, sneezing straining, etc., but this enlargement is scarcely up to one-half its capacity, and subsides on cessation of the effort. No effect produced by holding breath. It augments to greatest extent and most rapidly by forward and backward bending of head, deep and continued expiration, pressure upon neck, and especially compression of jugular veins. The filling of tumor by bending head forward is accomplished in two minutes; by pressure upon right jugular vein in one minute; and by pressure of both jugulars a little more rapidly. Although compression of left jugular causes the complete distension of the growth, yet only one-third of the tumor fills rapidly; and generally one-half of the tumor swells faster than the other, which is notably slower in distending. Expansion begins by undulating movements a half inch above orbital vein at the lower and sloping edge of tumor. Only when distension is complete does patient complain of sensation of tenseness and dizziness. If head is now brought erect or if deep inspiration is taken, the swelling disappears spontaneously in the space of a minute, thus subsiding twice as rapidly as it developed. Light pressure effects reduction in ten seconds, and when reduced the walls form a loose, bagging sac, which hangs down one-half inch over brow; and above is distinctly felt occupying the right half of forehead a crescentic depression with horns looking downward. A pulsating vessel is also felt corresponding to the supra-orbital artery, and which causes pulsation of empty sac. More careful examination also discloses a circular opening in external table, of the diameter of two and one-half inches, surrounded by a sharp osseous ring, but this

absence of the outer table is not shown to be a complete perforation through the entire thickness of the skull. Therefore, just beneath the skin lies the diploic structure, on which is plainly felt numerous osseous projections from the size of a lentil to a pea, partly smooth and partly rough, together with depressions or real furrows—apparently the bony canals in which run the frontal diploic veins. About middle of this opening but nearer to supra-orbital ridge, there is a prominent osseous projection, in the point of which there is an apparent opening, and which is painful when roughly handled. Attempts at compression had no effect upon tumor. The growth is, therefore, a cutaneous blood-pouch which communicates by means of the frontal diploic veins with the intra-cranial venous circulation. Operative interference considered doubtful and hazardous."

Hecker employed this term of "varix spurius circumscriptus venæ diploicæ frontalis" on the suggestion of Stromeyer, who chose the apellation from the analogy which the lesion seemed to bear to circumscribed false aneurism. In a later work (*Deutsche Klinik*, Bd. 11, S. 160, April 13, 1850), however, Stromeyer considers this title inappropriate, both on account of its length and the insufficient designation or description of the actual character of the growth which it conveys. Again, traumatism being, so evidently, a primary causative factor here, this case would appear to belong to the third or traumatic group; but it must be remembered that in the classification adopted, the traumatic class is composed alone of cases resulting from direct cranial fracture or suture separation.

The following, which is the case[6] of MM. Nélaton and Richard, was presented by Richard to the Société de Chirurgie, Oct. 1, 1856; and was afterwards examined and fully and carefully reported by Dupont (op. cit., p. 28):

"B., laundress, æt. 19; moderate stature and strength; chestnut hair; born at Signier (Mauche); admitted Sept. 22, 1856, to l'Hôpital des Cliniques, bed 4 of woman's pavilion, during the time that M. Richard had charge of the service of M. Nélaton, in the absence of the latter.

"No hereditary trouble in either herself or family. No serious attack of illness except one when 4 or 5 years of age, and and which was evidently some 'sweating fever.' In 1848, when 11 years old, she was seized with a violent throbbing frontal headache, which deprived her of sleep and lasted her the entire night. The day following, the pain still present, and greatly augmented when she assumed the recumbent posture. In arranging her hair on this day she lowered her head, and in so doing discovered that there was a soft point on top of head as large as a five-franc piece. In reply to questions, her mother informed her that it had existed ever since her sickness at the age above mentioned, at which date she first discovered it. Thus it is probably of congenital origin. She is subject to headaches, but which are uninfluenced by the menstrual epochs. Tumor has been increasing since 1853.

"Examination now presents the following characters: It is situated at the summit of occipital region over saggital suture, at superior angle of the occipital. When head is erect tumor is not visible, and no projection evident to the touch, but when head is carried forward or backward the tumor immediately appears, and is globular and voluminous, with a base of 6½ to 7 cm. in diameter. Uninfluenced by cough or respiration; but any exertion causes it to rise and become apparent, but again subsides on cessation of effort. It is soft and fluctuating; no pulsation or bruit, and artificial reduction not followed by cephalic symptoms. Reduction easy; sensation that of a pouch full of liquid which is emptied steadily and rapidly. Compression of internal jugular veins, even when head is erect, causes a rapid filling of tumor. Circular compression, by string tied around the head, and the jugulars compressed, the tumor appears quickly and to full size. Border of tumor smooth and nearly regular. Palpation shows two or three depressions which might permit intra-cranial communication; curvature of skull unaltered; coverings normal, and without œdema or infiltration. Inconvenience complained of is vertigo, which is produced by stooping or any sudden or extended movements of head. Drowsiness followed manipulation of the tumor. Only treatment adopted was that which would control increase of the growth. Patient now lost sight of until December, 1857, when she stated that she had been pregnant and was then a mother. After accouchement she had an attack of facial erysipelas, accompanied by intense fever and delirium. She had taken no precautions to arrest progress of tumor, and hence it was now found to be modified. These changes are: Increased in all diameters; surface of bone no longer normal in curvature, but is irregular, as if a chip of bone had been raised up from cranial vault, especially at anterior border. In the general depression the finger easily demonstrates four smaller depressions in the bone, two in the median line and one on each side of that line. The median depressions are thus disposed: The first is circular and placed immediately behind anterior border of the tumor, has a diameter of 1¼ cm., and admits end of finger pulp. The second median depression is located 1½ cm. behind the first, and has a diameter of ¾ cm. only. The left lateral depression is directed from before backward and from left to right, has the form of a cleft of less than ½ cm. in width by 1 cm. long; its posterior extremity extends to within 1 cm. of the median line and to 1 cm. behind first depression. The right lateral depression is on the same level with the left one, but it is circular and is less than ½ cm. in diameter. The anterior median depression has thus modified the external appearance of the tumor, which is now not regularly globular, but resembles the hilus of a kidney. Circular compression does not prevent filling of the tumor; and again closing the four osseous openings with the finger tips, and then inclining head forward, the tumor expanded with same rapidity, showing that there were other unrecognized communicating orifices in the bone.

"January 24, 1858. Tumor now increased in size

[6] Reported in my previous paper.

on its left side, at which locality a smaller tumor (1½ cm. in diameter) had formed in connection with it, and communicated with the larger tumor."

This case of MM. Nélaton and Richard is considered by them of *probable* congenital formation, but a careful analysis of the history and symptoms given leaves no doubt of its spontaneous origin, and which was the result, in all probability, of a rarefying asteitis, due to some trivial blow, about the time of the serious attack of illness in her infancy.

Under the subdivision of "Varix Verus Circumscriptus," already alluded to, Victor Bruns (Handbuch der Praktischen Chirurgie für Artze und Wundärtze, Bd. 1, Abth. 1, S. 191, with atlas of illustrations, Tübingen, 1854), mentions an example met with in his own practice:

"A farmer, 36 years old, has observed for the last three years the gradual formation of a swelling on the forehead to left of median line, which is alternately larger and smaller, and sometimes even disappears. He can trace it to no cause. It is entirely painless, firmly located near the middle line in the course of the left frontal vein, which latter, when filled, together with its bifurcation over the swelling, is plainly visible. The tumor is of size of one-half of a hen egg; becomes filled and distended when stooping, as, also, under all conditions interfering with return of venous blood flow from the head; can be instantly reduced by light pressure by the fingers, and when reduced there is distinguished in its site a perceptible depression in the cranium, which on right side is bordered by a padded osseous rim. Pressure upon the venæ frontales below the swelling does not cause its distension, neither does pressure from above prevent tumor from being emptied. (Vide fig. 13, Abth. 1, Taf. iii, of Atlas.)"

In conjunction with this case Bruns details a second instance; but careful examination of this latter one shows it to be simply a cutaneous venous varix with no indication of intra-cranial communication, hence I do not consider it is entitled to occupy a place among the present order of tumors.

In 1855 Dr. John S. Andrews reported a case of "Tubercular Encephalitis with Pulsating Tumor on the Occiput" (*New York Journal of Medicine*, new series, vol. xv, pp. 356–361, November, 1855):

"Lamartine Bovay, born in 1848, of healthy parents. Birth natural and head unusually symmetrical. Mind always active and very bright. Up to age of ten months he was very well, but at that date an eruption, following vaccination, appeared on his face and spread over surface; and as this subsided, dysentery ensued, followed by some pulmonary complication, which, in turn, was followed by glandular enlargements of neck and soreness behind ears, lasting several months. In the ensuing February he was attacked with a so-called intermittent neuralgia, characterized by severe occipital pain, stiffness of neck, and fever, which continued for three weeks. Similar attacks followed up to 1854, when some lung affection again manifested itself. This subsiding, the neuralgic symptoms again appeared, and were severe and erratic. The finale of this was the appearance of a pulsating tumor on back of head, attended by a gradual loss of sight in left eye. Under treatment, lasting from May to September, his health improved, the tumor disappeared, but no visual change. He remained in tolerable health, except headaches caused by excitement, etc., until May 7, 1855, when another neuralgic attack appeared with same previous symptoms; and about the fourteenth day of this seizure there was slight unconsciousness. He now was extremely prostrated, suffering agonizing pain in back and left portion of head. Veins of head full and enlarged, eyelids closed, pupils sensitive to light but eyes amaurotic. Hyperæsthesia. There was an indentation in occipital bone where tumor had appeared. A few days later tetanic convulsions, lasting several hours, supervened, and shortly thereafter the tumor again appeared, and he died five days later by increasing coma.

"*Autopsy*—eighteen hours after death. On detaching scalp a number of large distended veins were observed about middle of occipital bone. Just below the external occipital protuberance was found a depression about one-third inch in diameter and one-fourth inch in depth. This was the location of the pulsating tumor, and corresponds with the intra-cranial part known as the *torcular herophili*. Covering this depression in the bone was a membrane which appeared to be formed of the thickened walls of a distended vein, and on incising it venous blood freely escaped. This opening proved to be a complete foramen piercing the bone, about size of a crow-quill, and there was no doubt a free communication between the sinuses of the brain and the enlarged external vein. Brain showed tubercular deposits, effusion in membrane cavities and ventricles, in a word, tubercular encephalitis."

At a meeting of the Surgical Society, held Nov. 23, 1859, M. Verneuil reported the following case in behalf of M. le docteur Jules Dubois, Médecin Adjoint de l'Hôtel Dieu d' Abbeville (*Bulletin de la Societé de Chirurgie de Paris*, t. x, p. 238, 1859):

"*Case of a Blood-Tumor of the Vault of the Cranium in Communication with the Longitudinal Sinus.*—B. (Jean) born at Guer (Morbihan) April 8, 1833, of fine constitution, habitual good health, and without syphilitic manifestations. Belongs to 9th regiment Chasseurs. On May 8, 1859, he applied to be relieved of a wen situated on forehead between eyebrows. An ovoid tumor, about size of a hazelnut, very mobile, soft and pliable to the touch, non-fluctuating, of a slightly violaceous color, occupied the space comprised between the nasal eminence of frontal bone and border of true nasal bones on one side, and between root of brows on the other. No pulsation, no expansion, no rising, no venous varicosities in the vicinity. Light and moderate but continuous pressure caused complete disappearance of tumor, leaving nothing between the fingers but a little core-like substance about size of a lentil, soft and movable. A minute exploration after reduction discloses a thin pedicle which appears to spring from fronto nasal suture, but could not find any communicating opening or appreciable fissure. Compression being removed (patient in upright posture), the tumor returned gradually to its primitive volume.

Reclining on back caused tumor to be diminished four-fifths in circumference; but it augmented and became distended, on the contrary, when the head was inclined forward. Compression and reduction produces no trouble whatever. Interrogated as to the cause and formation of the growth, he said that about five years before he received a blow between the eyes from a stone violently hurled. There was no other symptom besides a thrombus, which disappeared by degrees, leaving, however, for quite a long time a slightly hard swelling, sensitive to pressure, with a heaviness of the head, but without pain. It was only at the beginning of this year (1859) that he felt for the first time a swelling which rolled under the skin. It was now of the volume of a pea, but increased gradually. It produced no trouble whatever, and his only desire to have it removed was on account of its unfortunate location. Accurate and well applied pressure with a roller bandage was totally insufficient, and had to be removed the following day. On May 17 he was sent to the Hôtel Dieu d'Abbeville, that my colleague might see the case. He entered the service of Dr. Vésignié, who also tried continuous pressure by means of forceps applied directly to the tumor; but at the end of forty-eight hours the patient declared that he could stand it no longer; the skin was excoriated, and the tumor had pressed out on either side of the clamps, demonstrating the inefficiency, if not inutility, of such a method. June 18 he returned to his corps, and a few days thereafter I found that the coloration of the tumor was deeper, somewhat increased in volume, and especially that its reduction was not so easy—the dorsal decubitis having little influence over its volume. This was, evidently, the result of the forceps-pressure and the handling, for, at the expiration of a fortnight after being left undisturbed, the tumor presented all of its former characteristics. August 7.—The tumor has progressively augmented in size, now equaling a pigeon egg, skin more thinned, and of a deeper violet color, and from time to time he experiences severe frontal headache, with a benumbing of the senses; tumor turgescent and less reducible. My confréres at the hospital concurred in my diagnosis of a sanguinous tumor communicating more or less freely with one of the sinuses of the dura mater, probably the superior longitudinal sinus. The pouch was evidently not single, but it contained, as shown after complete reduction by pressure, an elastic substance or areolar tissue communicating by a narrow opening with the sinus.

"A rarefying osteitis resulting from the contusion received five years prior to its appearance was, undoubtedly, the cause of this formation. No further treatment was employed, because considered either useless or harmful."

In the *Gazette des Hôpitaux*, October 14, 1856, Baron H. Larrey reports this case:[7]

"Val de Grâce, ward 29, No. 10.—O. (Antoine), musketeer of the 8th Line; æt. 23. Entered in September, 1856, with a varicose frontal tumor, the base of which, almost circular, was the size of a five-franc piece, situated on forehead above left eye, partly within and partly below the hair. He has no recollection of ever having sustained any blow or injury about the head, and he had not perceived its presence until one day, at the age of 11 years, his mother noticed the swelling on his forehead. He was superficially examined by the Army Examining Board, accused of possessing voluntary control over swelling, and declared fit for service, but trial showed that it was impossible for him to wear the shako. At present the tumor is found slightly elevated above the skin-level when patient is reclining, or even standing, but it promptly increases in size when the head is lowered. There are a few ill-defined deep-blue spots on its surface; it is soft, but gives no sensation of pulsation. When sufficiently depressed to feel the bone beneath there is discovered an irregular or stellated perforation of the cranium, and only its shape prevents the easy introduction of the finger therein. Compression causes no pain in tumor itself, but does produce a little pain, with mistiness of vision, in the eye of affected side. Slight symptoms of cerebral compression are produced by pressure upon the tumor. The day of admission to the hospital, after a rather prolonged examination, he was seized with marked vertigo, accompanied by vomiting, diarrhœa, etc. He was declared unfit for military service, and consequently discharged."

At the meeting of the Société de Chirurgie, Paris, October 1, 1856, Middeldorpff referred very briefly to the case of a young girl in whom such a tumor was situated high up in the median line of the occiput, and emptied into the superior longitudinal sinus. This patient was also mentioned by him in a personal letter to M. Dupont (Op. cit., p. 26), in which he stated that, unfortunately, the clinical notes of the case had been mislaid, and hence he was unable to give, with any degree of certainty, from memory alone more than an outline of the case.

M. Giraldés, at the séance of July 27, 1864, of the Société de Chirurgie, briefly related the clinical points of this case (Tumeur Vieneuse, *Bulletin de la Société de Chirurgie de Paris*, 2 Série, t. x., p. 357, 1864):

"He presented a child with tumor on frontal region. This growth seems to be formed by the superposition of two osseous fragments. Under the influence of effort, as, for example, blowing into the hands, the tumor swells up; but lightly applied pressure completely reduces it. The consistency is soft; the bending-over posture augments it; and puncture with a pin is followed by the escape of a little venous blood. There is no pulsation. It communicates, probably, with the sinus of the dura. The tumor is of five years duration, and appeared after a fall on the forehead; other than this there is no assignable cause for its origin. A furrow is distinctly felt over the point occupied by the growth, and, the tumor being reduced, pressure by the fingers over this groove prevents its reproduction, notwithstanding those exertions, etc., on the part of the child which usually causes its increase in bulk."

In the discussion which followed the presentation of this case, some doubt was expressed as to the communication of the growth with the superior longitudinal sinus; but the final result was a full concurrence

[7] Reported in my previous paper.

in the opinion of M. Giraldés as to the existence of intra-cranial association.

Again, the length of interval between the reception of the fall and the appearance of the growth is not given, but it is presumable that it did not appear immediately upon, or even a reasonably short time after, the infliction of the injury.

The next example is given by M. Simon Duplay (Tumeur sanguine de la vôute du crâne en communication avec la circulation Veineuse intra-crânienne. *Archives Générales de Médecine*, vi Série, t. 29, p. 94, Janvier, 1877):

"A young girl, moderately well-developed, enjoying habitual good health, and having menstruated regularly for the past eight months, presented herself to me at the Hôpital Saint Louis in the month of last August. She was born at term, and delivery of head natural and without interference. At the age of four years the child received a severe fall from the second story, which fractured the right clavicle, but the mother declares that the head was not struck and hence there was no injury to this part. Three years later, however, the child struck her head violently against a table, but the precise locality of the contusion could not be demonstrated. About two and a half years after this second accident the mother discovered, in combing her hair, the existence of a small soft tumor, flattened, situated at the posterior superior angle of the right parietal bone, in vicinity of lambdoidal suture. During last seven or eight months this growth has developed quite considerably, becoming modified in form, and increasing in depth. After shaving the scalp the following particulars were demonstrated: On right side of cranium, in a line uniting the ears in passing over the vault of the skull, at about 10 cm. in front of occipital eminence, there exists a rather projecting tumor, very irregular in contour, with poorly defined limits, of a deep violaceous color, skin-covering thinned, and measuring about 1 cm. from before backwards, and 7 cm. transversely. It continues outwards and downwards on the temporal bone as a prolongation, having the appearance of a large varicose vein, slightly tortuous and basselated, and, becoming greatly lessened in size, terminates in a *cul-de-sac* behind right mastoid eminence. Its entire length is about 2 cm. It is soft, non-resisting, fluctuating, easily depressed, and is incompletely reduced under the influence of very light pressure. The contents are evidently fluid, can be pressed out of the varicose prolongation and *vice versa;* and when the compression ceases the tumor and its prolongation gradually refill. Upon gentle palpation there is perceived a pulsation, very feeble, synchronous with the pulse. These are undulations rather than veritable pulsations, and there is no appreciable expansion. Again, careful and repeated examinations do not discover the existence of any of these vague pulsatile undulations in the varicose prolongation. These undulations, on the contrary, are greatest at the principal centre of the tumor. At the first examination there was heard by means of the stethoscope a faint whirring, intermittent bruit at the centre of tumor, but this could not be verified at subsequent examinations. Inclining the head forward causes the tumor to augment in volume, becomes very hard, and the child complains of a vague sensation of pain in the head; and the same phenomena are produced with more intensity when the head is strongly bent backwards. The normal respiratory movements do not exercise any manifest influence in the volume and tension of the tumor, but these are slightly influenced by forced expiration with the nose and mouth closed. Upon pressure upon the prolongation, so as to press out its contents towards the principal tumor, causes it to disappear completely, and it is not reproduced upon exertion or forward inclination of the head whilst compression is maintained at its junction with the principal tumor. Whilst this prolongation is emptied in this manner gentle pressure upon the principal tumor by means of the hand easily effects its complete reduction. Circular compression by means of leaden strips, etc., demonstrates the non-connection of the growth with the vessels of the scalp. The cranial wall on which the prolongation rests seems to be absolutely normal. One is compelled to admit that the tumor communicates directly with the interior of the skull or the diploic veins. When complete reduction of the tumor is produced there is felt on the cranial surface a sort of irregularity, which feels like an opening, but this is not certain; however, it is seen that compression applied by two fingers to this locality which resembles an opening, absolutely prevents the refilling of the tumor. When reduction is complete the patient complains of a little pain in the head, but she experiences neither vertigo, giddiness, dazzling, nor roaring in the ears. The tumor is indolent. Active treatment not advised."

The point of notable interest in this case is the peculiar venous prolongation terminating in a *cul-de-sac* behind the mastoid process, and which simulates a tortuous vein. The undulatory movements synchronous with the pulse-beat were due, evidently, to transmitted cerebral pulsations.

The last observation, which completes the series of cases belonging to the spontaneous class, is that of C. H. Mastin, in my previous paper (*Annals of Surgery*, vol. i, No. 4, p. 326, 1885):

"W. D. Penton applied for professional advice Sept. 10, 1881. He is a man 35 years of age, laborer, married, and the father of several children. His own health has always been good, and, with the exception of frequent dull headaches, is still excellent. In appearance, also, he is moderately robust and vigorous. There is no history or evidence of hereditary disease, nor is he cognzant of ever having sustained a severe fall, or any blow or wound about the head. When a youth he contracted a gonorrhœa, and also suffered from a venereal ulcer on the glans penis; but now the closest questioning and examination fail to discern the slightest indication of systemic infection. About five years ago he chanced to feel a small lump or wen-like mass, equal in bulk to a common acorn, on the left and posterior portion of the scalp. This was painless, compressible, disappearing entirely on pressure, but partially redilating on removal of the compressing force, and gave so little trouble as to render its discovery the result of the merest accident.

His attention being once called to the existence of the growth, frequent handling followed, and hence he is able to assert that the tumor gradually enlarged until it attained its present dimensions of a large chestnut, although he is equally assured it has remained *in statu quo* for the past eighteen months. As mentioned above, his only inconvenience is an harassing headache, which is fleeting in character—coming and going—and which he thinks is connected with the tumor, but he is unable to trace a positive or direct association therewith. He is confident, however, that the condition and size of the growth is materially influenced by a hearty meal, the recumbent and stooping postures with the head below the level of the remainder of the body, and after muscular exertion; under all of which circumstances it becomes full, tense, and decidedly augmented in volume.

"A careful examination whilst sitting upright, now reveals only a slight fullness of the scalp in the locality indicated, which readily, though somewhat slowly, disappears upon lightly made pressure by the finger or hand, and leaves in its stead an indentation or depression in the skull, occupying the upper extremity of left arm of lambdoidal suture. This depression is quite perceptible, and is of a triangular funnel shape, being wide at margins (large enough to admit tip of index finger), and gradually narrowing down, apparently, to a single small aperture where it penetrates the bone and emerges into the cranial cavity. When the sac is evacuated by compression, the tegumentary covering is regular, lax, movable, and moderately thin, and through which the surface of the bone is felt to be smooth, and devoid of all perceptible irregularities or roughnesses. Reversing this position, and causing the patient to recline or stoop, with his head hanging down, a round, distinct tumor is found to rise and expand steadily over the site of the indentation. It is soft, elastic, conveying to the touch the sensation of an ordinary hæmatoma or blood-tumor of the scalp, not discolored, and is easily reducible, after the emptying of which the osseous depression is again perceived. Dizziness and vertigo result if this posture, with the head lowered, is maintained for a short time. Pressure causes neither pain nor the least uneasiness—cerebral or otherwise. There is no pulsation or bruit; no appreciable effect produced by the respiratory act; but I find that any interruption to the blood-current through the jugulars increases the tension of the tumor. The surrounding integument is unimplicated, and there is no other lesion of the head. There is disturbed cardiac action, but both heart and lungs are without organic disease. The ophthalmoscope shows the papilla and general fundus of both eyes to be normal, although vessels of the disc are rather small and narrow. Hearing normal. Operative interference deemed inexpedient, and hence only palliative measures of a protecting leathern pad and avoidance of excessive exertion was advised."

Here was conclusively an example due to a rarefying osteitis originating, in all likelihood, from the resorptive action of a Pacchionian granulation.

(To be continued.)

PARTIAL PARALYSIS OF MOTOR OCULI NERVE.

BY CHARLES W. KOLLOCK, M.D.,

OF CHARLESTON, S. C.

The paralysis of certain muscles supplied by branches from a nerve, while muscles innervated from the same source are perfectly active, has not unfrequently been noted. A case of this nature has recently come under my observation which is thought worthy of reporting.

Eliza Grant, colored, aged about 30, applied at my dispensary for treatment of the right eye on April 17, 1886. Her history was as follows: About five years since she was confined without trouble. Two months later she was suddenly taken sick, had intense pain in head and was unconscious for a month. Upon regaining consciousness the right eye could not be opened. It was fully four months before the lid regained its power, and then very gradually. Electricity was applied a few times by a physician, but a month or more elapsed after its last application before any improvement took place. Since then she has been in good health, but has suffered at times from pain in the eye and head, and especially when sewing, or doing any similar work.

Upon examination nothing peculiar was at first seen beyond an apparent *retraction* of the globe. Vision was $\frac{5}{15}$? (Oliver's test card). While directing patient to follow the movements of the finger in different directions, in order to test the strength of the muscles, it was immediately noticed that when the finger moved in the horizontal plane all movements were normal, but as soon as changed to the vertical the eye (right) ceased to move beyond a slight twitching from side to side. Here was paralysis of the superior and inferior recti and inferior oblique muscles. Further examination showed the pupil somewhat dilated and an inability to read type smaller than Jaeger No 15, which could be seen at 12″—. + 3 D. improved reading to Jaeger No. 6 at 10″— 12″—. The ophthalmoscopic examination showed both discs physiologically cupped, media clear, fundi normal and eyes about emmetropic. Distant vision in both eyes was the same—the left normal in every respect and rejecting all glasses.

There are then three muscles, viz.: superior and inferior recti and inferior oblique, paralyzed, with the muscle of accommodation and the circular muscular fibres of the iris partially so—all receiving their nerve supply from the motor oculi. It will doubtless be safe to surmise that the patient had some inflammation and perhaps hæmorrhage near the origin of the nerve at the base of the brain, and that all muscles supplied by it were paralyzed at first, three continuing in that condition, viz.: superior and inferior recti and inferior oblique; two remaining partially paralyzed, viz.: muscle of accommodation and circular fibres of the iris, while the levator palpebræ and the internal rectus are normal in their movement. The third nerve is rarely paralyzed without the levator palpebræ being involved, and this was the case, as is proved by the inability of the patient to elevate the lid for four months.

That the levator palpebræ and internal rectus have

fully recovered, leaving the others still in a paralyzed state, is interesting, and especially since the levator palpebræ and *superior* rectus are supplied exclusively from the superior division of the motor oculi. Why these muscles should have fully regained their power can only be explained by the supposition that the fibres of the nerve supplying them must have their origin more remote from the seat of disease, and were therefore less affected. There was no history of syphilis, nor were there any symptoms of such trouble. Large doses of iodide produced no change, nor is it thought electricity would be beneficial after so long a period of inactivity and no improvement following its use before. The apparent *retraction* of the globe is of interest from the fact that the opposite condition usually accompanies paralysis of the motor oculi, on account of the relaxed state of the orbital muscles.

Charleston, S. C., July 15, 1886.

MEDICAL PROGRESS.

On Lesions of the Cornea Following the Instillation of Cocaine.—Numerous instances have now been recorded in which the use of cocaine has been followed by local ill effects: These may be divided into two classses, namely, suppurative panophthalmitis and lesions of the cornea. The former being in all probability, due to septic infection, cannot be said to depend directly upon the use of cocaine, except in so far as cocaine increases the absorbent properties of the cornea (a subject that will be considered presently) and direct inoculation occurs from impurities in the solution used.

The corneal lesions which have been observed are of two kinds; (1) an affection of the epithelial layer only, consisting of vesication or desquamation, and (2) interstitial opacities, often taking the form of a kind of striated keratitis extending from the wound.

One of the first to observe the superficial changes was Paul Bunge (*Klin. Monatsbl. für Augenheilk.*, 1885, p. 402), and very many instances bave been recorded since. In some of these, the case has not been complicated by the employment of any antiseptic solution, a point which, as will presently be seen, is of considerable importance. There can, therefore, be no question that the vesication and desquamation which occasionally follow the use of cocaine are really due to the action of the drug.

With the view of ascertaining how cocaine produces this effect, Würdinger has recently conducted some experiments upon animals (chiefly rabbits, but also upon dogs and guinea-pigs) (*Klin. Monatsbl. für Augenheilk.*, April, 1886). In addition to the anæsthetic action of cocaine, one of its most marked effects is the dryness of the surface of the eye which it causes; this is probably due chiefly to the anæmia of the conjunctiva and the diminution in the lacrymal secretion from constriction of the blood-vessels; but it is probably increased bv the wide opening of the palpebral fissure that usually occurs, and the absence of the natural and involuntary blinking movements.

In order to ascertain how far the changes in the corneal epithelium were due to these causes, Würdinger instilled a drop of a 5 per cent. solution into both eyes of a rabbit, at intervals of four minutes. The one eye was kept closed between the instillation, but the other remained open.

In the closed eye no changes whatever took place in the appearance of the cornea. In the other eye, after three or four minutes, slight changes were noticed; these increased, and, in twenty to twenty-five minutes after the cocaine had been commenced, the cornea presented a superficial and fine roughness, as well as depressed areas, which looked as if they were caused by the shedding of the epithelium. After an hour, the turbidity of the cornea had increased so much, that the condition of the iris could no longer be made out.

Further experiments showed that the intensity of the changes depended more upon the duration of the experiment than upon the concentration of the solution, or the frequency with which it was applied. By dropping distilled water upon the cornea, between the applications of the cocaine, changes which had already occurred were not removed, but their increase was prevented. Microscopic examination of the altered areas showed that the epithelium, were not removed, was thinned out, and that there was also considerable thinning of the anterior layers of the true corneal tissue.

As regards the interstitial opacities of the cornea, Dr. Wood-White (*Ophthalmic Rev.*, Jan., 1886, p. 6) appears to have been the first to suggest that they were due, not to the cocaine itself, but to the simultaneous employment of a solution of corrosive sublimate. He states that he has frequently used cocaine alone, and in conjunction with boracic acid, and has never seen any ill-effects arising from it, but that in the only cases in which he at the same time used a solution of corrosive sublimate (five cases of cataract extraction), a pearly-white opacity, extending from the wound, was visible on the second day; this cleared up completely in all the cases in a few days.

Dr. Wood-White has omitted to state the strength of the solution of corrosive sublimate used by him, and also whether he has used the same solution alone in other cases; but, assuming that the solution was of the strength ordinarily employed, the conclusion seems a reasonable one that the effect produced was in some way dependent upon the combined action of the cocaine and corrosive sublimate; and some of Würdinger's experiments appear to support this.

Dropping fluorescine into a cocainized and into a non-cocainized eye at the same time, Würdinger found that in the non-cocainized eye only the superficial layers became fluorescent, but that in the cocainized eye the deeper layers also became affected. When the epithelium was removed from a limited area, and "methyl-blau" was dropped upon the abraded surface, it alone became colored in the non-cocainized eye, while in the cocainized eye the coloring matter extended through the whole cornea. It seemed clear, therefore, that the effect of the cocaine was to increase the absorbent power of the cornea.

Finally, Würdinger found that weak solutions of boracic acid, corrosive sublimate, and even of common salt, which in the normal eye were perfectly innocuous, in the fully cocainized eye produced a turbidity of the cornea, identical with the early stage of the striated keratitis which sometimes follows cataract-extraction.

If subsequent experiments should verify these conclusions, it is evident that the views at present held as to the advisability of employing corrosive sublimate as an antiseptic will have to be considerably modified. It is of the utmost importance that these investigations should be carried further, in order to ascertain what is the weakest solution of corrosive sublimate capable of producing the lesions described, and the weakest that is efficient as an antiseptic. In the meantime, steps should be at once taken to ascertain whether any interstitial lesions of the cornea have ensued when cocaine has been used alone. It is significant that most of the reported cases have been furnished by institutions in which corrosive sublimate is used as a matter of routine; but in many instances it is not stated whether it was actually used or not, the point not being considered of any importance at the time of publication.—*British Medical Journal*, August 7, 1886.

NITRIC ACID IN TESTING FOR ALBUMIN.—DR. E. H. TROWBRIDGE, in a note on "A Simple Method of adding Nitric Acid to Urine in Testing for Albumin," says: We must bear in mind that the specific gravity of normal urine ranges from 1.015 to 1.022, though some authors place it as low as 1.005 and as high as 1.030. Now the specific gravity of nitric acid (U. S. P.) is 1.420, and dilute nitric acid (U. S. P.) is 1.059, each being greater than that of normal urine. To test the urine for albumin, pour into a test-tube of medium size enough urine so that there shall be a column 2 or 2½ centimetres in height; then with a pipette or small tube take up a column of nitric acid 3½ centimetres in height, or, in general, let the column of nitric acid be a little higher than the column of urine (so better to notice the displacement of the fluids). With the finger firmly pressed against the upper end of the pipette or tube, pass the latter to the bottom of the column of urine, still keeping the finger pressed against the upper end; the fluids will mix according to the force of their specific gravity—*i. e.*, the nitric acid will gradually flow to the bottom of the test-tube and the urine will rise in the tube to the height at which was the nitric acid. By this method we can more easily and more clearly notice any turbidity which may be formed, and without any agitation of the fluids. The same method can be followed in using acetic acid (U. S. P.), which has a specific gravity of 1.048, or the glacial acetic acid, which has a specific gravity of 1.056–1.058. —*Medical News*, Aug. 28, 1886.

PUERPERAL TETANUS.—DR. W. NETZEL mentions in the *Hygeia* a case of puerperal tetanus. The patient was a woman of 25, a primipara, who was brought to the lying-in hospital by a midwife a day and a half after labor had commenced. The fœtus was dead, and its large head locked in the pelvis. The os uteri was 5 centim. in diameter, thick and rigid. Perforation was resorted to. The fœtus and placenta were expelled spontaneously five hours later. The cavity of the uterus was washed out with a 3 per cent. solution of carbolic acid. The temperature rose on the fourth day and the lochia became putrid. Intra-uterine injections of a 3 per cent. solution of carbolic acid were used, and the vagina was washed out with sublimate. On the eighth day trismus and stiffness of the neck appeared. The following day there was stiffness in the shoulder and spasmodic contraction of the facial muscles, with painful spasms. The temperature was 41° C.; pulse 140. The woman died at mid-day. Chloral had been given and subcutaneous injections of morphia and curare. On making a post-mortem examination, an ulcer was found in the cervix reaching through the uterine walls to the peritoneum. There was parenchymatous degeneration of several organs. Dr. Netzel considered the tetanus in this case to be a symptom of general septic infection.—*The Lancet*, July 31, 1886.

HYDRASTIS CANADENSIS IN UTERINE HÆMORRHAGE.—Some doubts having arisen as to the propriety and the entire safety of using this drug in cases where it is desirable not to cause contractions of other muscular structures than that of the blood-vessels, in consequence of Fellner's having reported that it caused uterine contractions in some of the lower animals, PROFESSOR SCHATZ has investigated the question (*Berl. klin. Wochen.*, 1886, 19), and does not find that it produces any such effect in the human subject. He concludes, therefore, that hydrastis is especially useful in hæmorrhages due to myomatous growths in cases in which their forced expulsion from the uterus would be likely to be attended with evil consequences; in relaxation (eccentric hypertrophy) of the uterus where, after the removal of its contents, it becomes baggy, thus favoring a renewal of the bleeding; in all cases of hyperæmia of the genital organs in which either ergot does not suffice to cause contraction or the alternation of contraction and relaxation serves only to increase the hyperæmia; in cases of acute or chronic pyosalpinx, in which it is important to diminish the hyperæmia without provoking contraction of the tubes; and in chronic peritonitis, oöphoritis, etc. It cannot be replaced by digitalis, since the latter acts unfavorably on the digestion.—*N. Y. Med. Jour.*, Sept. 4, 1886.

MODIFIED CHLORODYNE, prepared according to the following formula, is used by DR. MÉNIÈRE after violent uterine hæmorrhages and in acute painful affections of the uterus:

Chloroform	2½	drachms.
Ether	75	grains.
Alcohol	2½	drachms.
Morphine hydrochloride	¾	grain.
Hydrocyanic acid (1 to 10)	75	grains.
Tinct. of cannabis indica	75	"
Glycerin	750	"
Essence of mint	5	drops.

—*N. Y. Med. Jour.*, Sept. 4, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, SEPTEMBER 18, 1886.

IS LIFE WORTH SAVING?

Such is the question asked and somewhat briefly discussed by DR. CHARLES L. DANA in *The Forum* for September. It is not unlike the question propounded a few years ago, and learnedly discussed in a book—"Is Life worth Living?" the obvious answer to which was that it depended on the liver. "Addison once said," says Dr. Dana, "that man should take more care for the direction of his life than the preservation of it. We of this century are inclined perhaps not to reverse Addison's sentence, but to lay much more stress on the question of preservation." Addison should have shown how a life could have direction without being preserved, but he did not.

When the question "Is life worth saving" is asked, the question immediately arises, "Whose life?" And from this arise many other questions, such as the value of the particular life, the cost necessary to save it, whether it will not cost a more valuable life to save the particular one. These are questions for the individual, not for nations and governments; these must look to the preservation of every life, at whatever cost, of however little apparent value it may be. Modern medicine, surgery, and sanitary science have shown conclusively that life can be saved, that years and years may be added to human life as a whole. It is almost impossible to estimate the years saved to human existence by vaccination alone, by ovariotomy, by quinine. "Compared with a century ago, although no particular individual reaches any greater age, the average duration of life has doubled. English statistics show that since 1861 the decreased death-rate adds 2,000 years to the lives of 1,000 males, of which years seventy per cent. is passed between the ages of twenty and sixty, the productive period." And suppose we look at the economic value of life-saving. Sir James Paget has estimated the value of a child's life at $200. "It costs an average of $500 to raise a child. Its death at the beginning of the productive age is, therefore, so much lost. The value of an adult life to the State is placed at $750 (Farr's estimate, which is very low); and its annual productive power at $95." We may now estimate that about one-half of all deaths occur during the productive age. The annual deaths in the United States, during this age, is about 400,000. It is easily seen that a small per cent. reduction of this death-rate would mean a very large amount of money. This is still more clearly seen when it is remembered that every death represents about two years of sickness, and that in this country there are about a million and a half persons sick all the time, or thirty-six million sick for one month every year. "In England and Wales, it has been found that every working man averages a week and a half of sickness in the year. Rochard estimates that the annual wage-loss to France from sickness is $70,000,000, the total loss $141,000,000, and the loss from death $188,000,000." The actual loss from sickness is then immense. We have reason to believe that any means which will lessen the death-rate will lessen sickness to a corresponding degree. "The economic opportunities in this direction are, it is believed, still very great; and we are assured that the death-rate can in time be reduced from the present average of 20 per 1,000 to 10 or even 5 per 1,000, while the amount of sickness ought to be reduced nearly one-fourth, or from 200 per 1,000 to 60 per 1,000."

While it might require some time and research it would not be a difficult task to show that human mortality and sickness have been diminished within the past ten, twenty, or fifty years, and some of the means by which this has been accomplished have been already indicated. In one of the largest hospitals in this country (Bellevue) the percentage of deaths to admissions was twenty per cent. for forty years; but it is now about ten or twelve. In the ninety years from 1741 to 1827 the proportion of cures to deaths in St. Bartholomew's Hospital increased fivefold. For thirty-six years the death-rate from consumption has steadily decreased. Since Lister showed that perfect cleanliness was essential in surgical operations, only a few years ago, the number of years saved to human existence, and the number of years saved to individuals by diminishing the time of sickness is enormous. The mortality in

childbed has also been reduced from a percentage of one in twenty to one in two hundred (in public institutions); and this, it should be remembered, is a disease which selects its victims from the productive period of a woman's life. Who can estimate the amount, in life and money, in days of sickness, that have been saved by such efficient bodies as the State Boards of Health of Michigan, Illinois, and Louisiana? They stand between the people, of their own and other States, and the list of preventable diseases, some of which are so fatal. The late epidemic of small-pox in Montreal is a dreadful example of the neglect of a government in its proper duty to its citizens.

There is, however, another side to this picture. While what are recognized as preventable diseases are less frequent and less fatal than formerly, while miasmatic diseases formerly stood at the top of the list, it seems to be a fact that local diseases are now more prevalent and more fatal than ever before. But the so-called local diseases cannot all be classed among the non-preventable disease. Diseases of the heart and lungs, nervous diseases, cancer, diabetes, syphilis, renal diseases, idiocy and insanity, and diseases from alcoholism while doubtless more frequent or more fatal than formerly, are in a great number of cases, in a very large percentage of cases, preventable. Fewer persons have consumption, and more get well; and there is thus a larger percentage of tainted survivors to propagate the diseased tendency to offspring. There seems to be an undoubted increase of the defective classes; an increase in the number of still-births, and in the number of suicides; but we must consider very many of these as due to distinctly preventable causes. Of course the great question in many cases is how to prevent them. Some of them, in the existing state of society, cannot be prevented at present; others can only be prevented by the making and enforcement of rigid laws. Should the day ever come when there will be strict laws against the propagation of syphilis, against the marriage of defective and alcoholic persons, then we may look for a great decrease in the number of local and nervous diseases. When the day comes, as it must, when people will recognize and obey the laws of health in education and life, there will be a large decrease in the number of nervous cases, and there will certainly be a decrease in the number of still-births.

"Is life worth saving?" We cannot give a better answer than Dr. Dana has given. "Life is worth saving because it represents something divine and immortal; and it ought to be saved and cared for at every cost, no matter how wretched or insignificant. To do this will not pay in money, but it is society's moral discipline, and the reward is a spiritual enrichment. It is not enough that society cannot afford to be cruel, or that it, as a utilitarian measure, must put a high value on the life of its members. Our ideas of cruelty are relative. They were not all bad who watched the gladiators, and who knows how soon we might become insensible to the fact that our loads of vice, deformity, and hopeless suffering were scientifically and inexpensively removed? In fine, life is only worth saving because it represents more than mortality; and only from this higher and spiritual stand-point can preventive and curative medicine in all its applications be justified."

COMPENSATION OF MEDICAL EXPERTS.

An interesting paper on this subject was read before the Chicago Medico-Legal Society, on September 4, by DR. MARSHALL D. EWELL, the well-known medico-legal attorney. The subject is one of practical interest to medical men, and it may be well to note the statutory provisions bearing on the question in some of the States.

In Iowa "Witnesses called to testify only to an opinion founded on special study or experience in any branch of science, or to make scientific or professional examinations, and state the results thereof, shall receive additional compensation, to be fixed by the court, with reference to the value of time employed and the degree of skill or learning required." Similar provisions may be found in the statute books of North Carolina, Rhode Island and Minnesota. In Indiana experts are compelled to testify to an opinion without extra compensation. In confiict with this is a decision of an Indiana Court, based on the clause in the Indiana Bill of Rights which provides that "No man's particular services shall be demanded without compensation." In Alabama it has been decided that a physician, like any other person, may be called to testify as an expert in a judicial examination, whether it be civil or criminal in its nature, without being paid for his testimony as for professional opinion; and that upon refusal to testify he may be punished as for contempt. This is about equivalent to a Government compelling a chemist to make analyses in suspected sugar-import frauds without paying him more than—say two dollars a day. The U. S. District Court, Western District of Arkansas, refused to punish as for contempt a physician who refused to testify unless first paid a reasonable compensation.

A Court of Appeals in Texas decided in 1879 that while a physician cannot be compelled to make

an autopsy, yet, having made it, he may be compelled to testify as to the results of his examination. This is only right; but ought a Court to compel him to give his *opinions* as to the case without compensation? In 1884 an Illinois Court fined a physician as for contempt for refusing to answer a hypothetical question in a case of assault and battery. The Court did not go beyond the case in question in the opinion, and might rule differently in another case. In criminal cases, or in any cases in which they testify as to facts that have come within their own knowledge, physicians stand upon the same basis as ordinary witnesses, and are only entitled to the ordinary witness's fee. It would probably be held by almost any Court that a physician cannot be compelled, in order to get his opinion without extra compensation, to examine an insane person or make an analysis of a stomach. It would also be unreasonable to compel a physician to attend an entire trial in order to hear testimony upon which to express an opinion, without extra compensation for his time, if not for his opinion.

We may conclude by quoting from a speech made by Hon. Emery Washburn before the American Academy of Arts and Sciences, in 1866: "If the case be one of a public nature, involving the question of a crime of magnitude, where the public safety requires the investigation, the right to compel the attendance of such witnesses becomes an incident to the exercise of government itself, in the same way that a juror is obliged to sacrifice convenience or profit to render a public service; or the soldier is called upon to take up arms in defense or execution of the law. It rests upon the maxim *salus populi suprema lex.*" But if the State may employ extra expert legal counsel, at extra compensation (as in the late Anarchist trial), why should the State refuse to pay a *medical* expert for an important opinion. Mr. Washburn quotes approvingly the following: "There is also a distinction between a witness to facts and a witness selected by a party to give his opinion on a subject with which he is peculiarly conversant from his employment in life. The former is bound as a matter of public duty to testify to facts within his knowledge. The latter is under no such obligation; and the party who selects him must pay him for his time before he will be compelled to testify."

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

This Association will convene in Toronto, Canada, on October 5, and will continue in session four days. The American Public Health Association is now perhaps the largest scientific organization in this country, and is still growing rapidly. At this, the fourteenth annual meeting, a large foreign delegation, including thirty representatives from England, is expected. The meeting in Toronto will thus be largely of an international character, as is the Association now, it having extended its working territory so as to embrace the Dominion of Canada. At the last annual meeting, held in Washington, a new "Section of the State Boards of Health" was created, and at this meeting a day, or a portion of a day, will be devoted to the exclusive consideration of matters relating to State Boards of Health. The subjects for discussion at this meeting embrace a variety of topics, such as the "Disposal of the Refuse Matters of Cities and Towns," "The Condition of Stored Water-supplies, and their Relation to the Public Health," "The Best Means and Apparatus for teaching Hygiene in the Public Schools," "Sanitary Experiences in Connection with the Exclusion and Suppression of Epidemic Disease," and the subjects for the Lomb Prize Essays will be included in the general discussion: "The Sanitary Conditions and Necessities of School-Houses and School-life," "The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the Best Means and Appliances for Preventing and Avoiding them." These are subjects of great importance to the public health, and it is to be hoped that much good will come of a thorough discussion of them by the members of the Association and the foreign delegates. Quite a number of papers have already been promised on these subjects by sanitary writers.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, June 9, 1886.

VICE-PRESIDENT, WM. H. TAYLOR, M.D., IN THE CHAIR.

T. E. MCARDLE, M.D., SECRETARY.

DR. E. CARROLL MORGAN presented two

SPECIMENS OF MUCOUS POLYPI OF THE NARES,

which he had recently removed, and remarked that the growths were of unusual interest on account of their enormous dimensions. The first case was a gentleman of 28 years, in whom the polypoid mass, which was the size of an apricot, occupied the posterior extremities of the inferior and middle turbinated bodies of the right naris.

The polypus was in immediate proximity to the

pharyngeal orifice of the Eustachian tube, causing annoying tinnitus aurium and partial deafness on the right side. The admirable snare recently introduced by Dr. Hartman, of Baltimore, was the instrument employed in removing the polypus, which came out in two sections and at one sitting. The attachment was touched with the galvano-cautery blade at a cherry-red heat.

A fact worthy of mention is that this patient, who had long suffered from violent bronchial asthma, found great amelioration of and greater freedom from asthmatic seizures after the extraction of the polypus. The tinnitus and deafness have entirely disappeared.

The second patient was a sturdy farmer of 50 years, who came to Dr. Morgan's office that morning from Upperville, Farquier Co., Va., complaining of occlusion of the nostrils of ten years duration. Examination demonstrated slight deformity of the nose and a condition of the nares truly peculiar, for they were so full of polypi that the latter protruded through the anterior nares in front and the naso-pharyngeal orifice behind. There was great intra-nasal pressure, due to the presence of the tumors, loss of smell, impaired sight and hearing, as well as severe occipital and frontal pains.

The snares of Hartman and Douglass were used in operating, and a mass of mucous polypi weighing three ounces, extracted in sections at one sitting, nasal respiration being restored, and little blood having been lost. The galvano-cautery will be used in this case also, and the nares washed daily with the tinctura opii crocata (Phar. Germ.) diluted with water.

Dr. Morgan said that the second case was of interest from the fact of the great number and large size of the mucous polypi removed at one sitting. He had occasionally extracted forty or more distinct nasal polypi from one patient, but had consumed weeks in the undertaking.

DR. J. TABER JOHNSON presented a

MASS FROM THE CERVIX UTERI.

Miss A., white, aged 23, came to me from Emmettsburg, Md. May 25, and gave the following history: Her menses began at the age of 14, and until three months ago were perfectly natural. In March last she began to have severe bearing-down pains and hæmorrhages. She consulted her family physician in Emmettsburg, who, fearing it might be cancerous, took her to a distinguished surgeon in Baltimore. He examined her in his office and told her she would have to go to "the Infirmary" for an operation. This examination caused pain and considerable hæmorrhage. She declined to go to the Infirmary, and came with her mother to Washington and consulted me on the above date.

Upon examination I found a soft, spongy mass, about the size of a hen's egg, growing from one side of the cervical canal, which bled easily and profusely on pressure, but gave her no pain except at her periods, when there was much bearing dysuria and backache.

Upon my advice she entered a private room at Providence Hospital, and twelve days ago I removed this mass, with the assistance of the House Physician, who gave the ether, Dr. T. C. Smith, and a medical student.

An inverted V-shaped opening was left after all the diseased tissues had been cut away, which I closed with sutures much as one would close the lips of a lacerated cervix. To preserve a patulous canal and os I passed a tent of coarse cloth soaked in carbolized oil into the canal high up, and left it protruding a quarter of an inch into the vagina. No symptoms followed the operation. I removed the sutures on the tenth day and found union perfect. A sound passed readily through a good os and cervical canal. The only point of interest attaching to the case is in its diagnosis. All who saw it previous to the operation thought it to be epithelioma, and she was advised by one physician that her case was hopeless, as nothing could be done which would permanently benefit her.

The following microscopical opinion gave me much pleasure, as the patient is a beautiful woman and engaged to be married:

"The specimen taken from neck of uterus is *not* malignant. I would call it an *adenoma* starting from mucus glands of neck. In fact, it does not amount to much more than an hypertrophy of those glands.

"W. M. GRAY, M.D.,
"Microscopist Army Med. Museum."

DR. JOHNSON also presented a

SPECIMEN FROM AN OÖPHORECTOMY.

Miss C., aged 19, white, the daughter of a farmer in Montgomery Co., Md., came to me upon the recommendation of her physician in the county, Dr. Carraher, and of Dr. Kleinschmidt, her consulting physician in this city. I saw her first in October, 1885, when Dr. Frank Baker brought her to my office for examination, with especial reference to ovarian disease. I discovered none at that time and recommended no operation. Dr. Baker understood from statements of the patient and her family, that she had spasms from infancy. They, however, occurred during the week preceding and at the time of her periods, and for a few days subsequent to the flow—two weeks out of each month—yet I did not detect the ovarian influence in her case and recommended a continuance of the bromides. I am informed by Dr. Baker and Dr. Kleinschmidt that they both succeeded in keeping her free from convulsions, one for nine weeks and the other for eleven, by the use of very large doses of this drug, taking, the girl told me, as high as 300 grains a day for some time.

Her condition was such while under its influence as to make her convulsions preferable. Most of the time when "sufficiently drugged," as they termed it, to keep off the spasms, she was so stupid and helpless as to be compelled to keep her bed, and her cerebral functions were so clouded as to make her for the time little less than idiotic. After going on in this way for six months longer, the young lady finally rebelled, and refused to take more medicine, and demanded, if there was a surgical operation which offered any hope of relief, that it should be performed, and this chance given her to get well. She preferred

death to her present uncertainties and sufferings. She was sent to a private room in the Providence Hospital and I had her under careful observation for about a week, when I determined to comply with the earnest solicitations of her mother and herself, and remove her ovaries and tubes.

There had evidently been a wrong impression about the time when the spasms began, and that they were and had been a true epilepsy from infancy. The following is the history of the case given to me by Mrs. C., with the full knowledge that it was to influence my mind as to the propriety of this operation, and that if the facts were misstated a fatal error might be the result. Mrs. C. stated that the doctors and all persons were mistaken who believed that her daughter's spasms had originated in childhood, and continued ever since. The facts are as follows: She had a spasm when she was ten days old, no one knew why. She had no more until she was three years old, when an attack of pneumonia was ushered in by a spasm. She had no more until she was between 12 and 13 years old, when they began to occur at monthly intervals, accompanied by pain in the head, back and uterine region. Her physician told them that her menses were about to appear and that she would be better as soon as they were established. She had her first period when she was 14 years and 5 months old. The spasms were aggravated and the pains increased at her periods. This state o. things has continued from that day to this uninfluenced by medicine, except as stated above, although, to use her mother's expression, she has taken "gallons and gallons and gallons of it," and now positively refuses to take any more. With this statement written out and read to Katie, who confirmed it, as far as her memory went, I concluded to operate.

I believed her case to be one of menstrual or hystero-epilepsy. I was more ready to accede to the wishes of the patient and her mother since I had read the address of Dr. Gordon, of Portland, to the American Medical Association, as Chairman of the Section on Obstetrics and Gynecology. Dr. Gordon reported twenty-five cases of otherwise incurable or uncured cases of prolonged hysteria, treated by Tait's operation, and a cure was produced of the most dreadful and painful symptoms in all his cases but one or two. Women who had been great burdens to their friends and to themselves for years were by this operation restored to lives of usefulness and happiness. With this report before me I felt, although this was a new departure in the treatment of hysteria, that I had sufficient precedent to operate in this case.

On the 27th of May I removed her uterine appendages in the presence of Drs. Kleinschmidt, T. C. Smith, Carraher, Cuthbert, the house doctor, and a medical student. I found in the left ovary a cystic tumor about the size of a small hen's egg. There were cysts in both ovaries. The large cyst was rup tured in its removal. It appears smaller now than when removed, owing to its having been in alcohol for nearly two weeks. The patient has made a perfect recovery so far, and was to-day, the twelfth since the operation, up and dressed and visiting in the rooms of other patients. She had no pain nor rise of pulse or temperature above 100°, and took no medicine. Sutures were removed on the ninth day and union found perfect.

I have received the following letter from the mother of the patient, which I append to the history; also the report of Dr. Lamb, Pathologist of the Army Medical Museum:

"Dr. Johnson:——My daughter has been treated by eight different doctors for six years, and never derived any benefit from the medicine they gave her. She has taken, not pints of medicine, but gallons, and I believe I would be safe in saying a barrel. She has taken it until it has nearly destroyed her mind and greatly affected her throat. She grew worse every year. The operation that was performed I fairly understood, for death would have been a great relief to her, and I am perfectly happy at her present condition, and so is she. * * *"

Ovaries and large part of each Fallopian tube. Right ovary 1⅜ inches in diameter, ⅜ inch thick; contained a number of small cysts and one large one. Left ovary converted into two cysts respectively ¾ and 1¼ inches in diameter.

Dr. T. C. Smith said he had some knowledge of this case before it came under Dr. Johnson's care. The patient had been, he believed, under the care of a homœopath, and, of course, had not improved. Dr. Smith would ask Dr. Johnson the following questions: Was there any uterine displacement? Was there stenosis of the cervical canal? Were the ovaries felt on bimanual examination? What treatment was pursued before resorting to a surgical operation of such magnitude as the one performed? May not an ovary be healthy and yet full of small cysts? Are there not cysts which are not pathological? Was the normal stroma of the ovaries destroyed in part or whole? What per centage of Dr. Johnson's cases have recovered from the symptoms for which he operated? Dr. Smith contended that it is not proper to take any man's *ipse dixit* as to treatment. Dr. Johnson should have kept the patient under his own observation for some time. Dr. Smith read extracts from various reports going to show that ovaries removed by normal oöphorectomy gave no indication of the cause of prevalent symptoms, and that these ovaries differed in no respect from ovaries found in women who had died from various causes and who had not complained of ovarian symptoms. He said that a woman might have large cysts of the ovary and yet complain of none of the symptoms described by Dr. Johnson. Dr. Smith did not wish to be understood as saying that the uterine appendages should not be removed when a woman suffered from hydro-, pyo- or hæmato-salpynx, or where there was a displaced ovary which could not be returned. He thought, however, that it was time to call a halt when young women were being spayed in great numbers, and yet when the ovaries are removed they show no indication as a cause of symptoms.

Dr. Kleinschmidt said the patient came under his care two years ago. He and others had tried every drug that had ever been given for hysteria. When the interval between the attacks was increased,

the violence of the attacks was increased. He had once kept off the attack for nine weeks. He had told the patient's mother that there was only one remedy remaining, and that was removal of the ovaries. This was refused, and then the case passed from under his care. She was then treated by Drs. Carroher and Baker until she finally refused to take any more medicine. She was reduced almost to a state of idiocy. Eventually she consented to go to Providence Hospital and permit Dr. Johnson to remove the ovaries. If there ever was a case demanding surgical treatment, this was one, in his opinion. In his examination of the patient he had not discovered any stenosis of the cervical canal, or any displacement of the uterus. There is nothing new in saying that an organ only partially diseased may continue functionating. The history of the convulsions in this case is not clear. He is not certain whether they dated from infancy or puberty.

DR. JOHN B. HAMILTON said that two weeks ago yesterday he removed the ovaries of a patient 18 years old. She had suffered from convulsions since puberty. She had been treated on the Pacific coast and also here in Washington. The intervals between the paroxysms became shorter and shorter despite all efforts. For several months he had treated her most attentively and carefully, and during his recent absence she was under the care of Dr. Taber Johnson. There was no stenosis of the cervical canal; no tenderness or enlargement of the ovaries could be detected by bimanual examination. A slight displacement was corrected. There was no dysmenorrhœa. The convulsions persisted for days, and sometimes there was episthotenos. Bromides alone would not produce sleep, and he was compelled to resort to brandies and chloral. Her mother said inhalations of chloroform had been tried. Dr. Hamilton was strengthened in his determination to operate by hearing the paper of Dr. Gordon. The day Dr. Hamilton operated the patient was unconscious and had been so for days. She has had no paroxysm since the day following the operation. He believes acute mania would have resulted if he had not operated. She would have had cerebritis, followed by death. The removed ovaries were both cystic. One was larger than the other. The left one was adherent in the basin of the pelvis. Had she lived she would undoubtedly have had an ovarian tumor. It is not fair to decry the operation because every case does not recover from all the symptoms. How often would we operate for scirrhus if we waited until entire relief followed? Materia medica does not seem to be efficient in these cases. Dr. Hamilton desired a description of a normal cyst. Cysts are composed of abnormal tissue, and are always pathological. It may be that those who perform this operation will live to regret it; but they ought not to be deterred because every case does not get well, and they can derive comfort from the results of Gordon and Wylie.

DR. J. FORD THOMPSON had no experience with this operation. He thought, however, that there is no operation so clouded in doubt. Of course it may be necessary in cases of fibroids to stop excessive hæmorrhage; but in the case of young girls, it is our bounden duty to be convinced that this operation, and this operation alone, will result in a cure, before we undertake to deprive them of such important organs. Men are not castrated unless some serious disease of the testicles is plainly made out. Symptoms such as these girls had may be caused by regional or local troubles. Laceration of the cervix or displacement of the uterus has been said to produce such symptoms. Hysteria may be present without ovarian disease.

Dr. Thompson related the case of a woman now under his care. He had cured a bilateral laceration of the cervix without relieving her symptoms. In making further examination he ruptured a cyst. On the left side there is a displaced ovary. On the right side he detected a movable body which proved to be an anteflexed uterus, the fundus being almost as low as the cervix. This anteflexion may be the cause of her troubles. But she has heard of oöphorectomy and I presume she will eventually find somebody who will gratify her desire to have it performed upon her. To say that a cyst is pathological does not imply that it is the cause of such symptoms as lead Drs. Johnson and Hamilton to operate on these young girls. Gynecologists operate upon subjective symptoms and find the ovaries practically healthy. To say that the ovaries are cystic will not account for the symptoms, for either of these patients might have had an ovarian cyst weighing many pounds and yet never have suffered a moment from any such symptoms. Surgeons do not thus operate for the removal of the testicles. They must have something more definite than nervous phenomena presumably coming from the testicles. Indeed, they recognize no such symptoms. To prove the efficacy of oöphorectomy the result of many operations performed a sufficiently long time ago must be recorded. Dr. Gordon's cases were operated upon too short a time since. The length of time since the inception of the operation is too short to prove much. Every method of treatment must be persistently tried. The younger the patient the longer he would hesitate about performing so serious an operation as the unsexing of a woman.

DR. S. C. BUSEY said that while he was not opposed to oöphorectomy and would counsel its performance if convinced of its necessity in any particular case; yet it was becoming so popularized that many thoughtful minds considered it time to call a halt before every woman with nervous disturbances should have her ovaries removed. He agreed with Dr. Thompson that the younger the patient the longer we should hesitate. He had seen cases similar to the one related by Dr. Hamilton, that got perfectly well after marriage and pregnancy. In response to Dr. Hamilton, Dr. Busey narrated a case in point. The patient had suffered from convulsions since her 14th year. They continued for six years, sometimes lasting three days. She married three years ago, has a baby 18 months old and will soon become the mother of another. She has never had a convulsion since the beginning of the first pregnancy. He said that is only one of several cases. The mere fact that a woman has her abdomen opened and recovers with-

out a bad symptom proves nothing but the skill of the surgeon and the perfection of technique. The first operation was performed by Battey thirteen years ago. Surely surgery ought to be able to give us some statistics and facts showing a sufficient ratio of permanent cures in order to establish the operation on a pathological basis. Dr. Busey said he was not referring to operations for the relief of pyo-salpinx and fibroid tumors, but to operations for the cure of nervous disturbances of obscure origin. Charcot and Weir Mitchell have cured many such cases without unsexing the woman.

Dr. Busey thought we should have some better means of diagnosis than the ovaries shown on a dinner plate. It is very easy to say that failures should not be charged in this operation any more than in typhoid fever. There is no parallelism. He desired to know the number permanently cured in the last thirteen years; and if the number of years added to the lives of the cured would counterbalance the lives lost. He had no doubt cases had been cured; but how many? That twenty-five operations have been performed in six months by one man proves nothing. There is a very considerable reaction taking place. There is hardly a medical journal that does not contain a paper deprecating the popularization of the operation. Dr. Emmett has seen only two cases in which he thought the operation advisable, and both patients recovered under other treatment. Others were now declaiming against the too great frequency of the operation. The mere statement that a macroscopic examination shows the ovary to be undergoing cystic degeneration does not prove much. What we want to learn is the pathological changes in the normal tissues of the ovary. Prominent men with large opportunities have declared that it is a rarity to see a perfectly healthy ovary. Dr. Busey in conclusion said he wished it to be understood that he had no desire to criticise the two cases reported to-night. His remarks, he said, applied to the operation in general.

On motion further discussion was postponed until the next meeting, at which[1] Dr. Joseph Taber Johnson replied as follows:

As the futher discussion of this subject was postponed until the next meeting, on account of the lateness of the hour, thus preventing me from replying to the criticisms upon my operation, and to the various questions asked me during the debate; and, as I shall be unable to attend the next meeting of the Society to "close the discussion," the Secretary has kindly offered to read any reply which I may desire to write. In accepting this offer, I beg to say first in reply to Dr. Smith's question about the former treatment of my patient, that I refer him to the remarks of Dr. Kleidschmidt, who had her under his care long enough to demonstrate to his entire satisfaction the uselessness of further treatment. He found no stenosis of the os or cervical canal; no uterine displacement and no vaginal disease; no tenderness or inflammation. Neither did I. She had no uterine disease. She had been treated for ordinary epilepsy, which, curiously enough, annoyed her mostly at the time of her monthly periods. That and the ovarian pain is all the disease she had. I have ventured to call it menstrual epilepsy, and to call many of her other symptoms hysterical.

She had had treatment in abundance during the years of her life from 12 up to date of operation, covering a period of fully seven years. She had been blistered and purged, and puked, mercurialized and narcotised, made stupid and idiotic for weeks by the bromides up to a daily dose of 300 grs.; had been kept in bed for two months by Dr. Baker, and no good result followed, and she was getting worse. She saw, and her mother saw, that all this had done no good. She was no better, she says, after a course of treatment, by Dr. Murphy, though she enjoyed some temporary benefit while under his care. She "had taken gallons and gallons of medicine," and with what result? She was getting worse instead of better; she was becoming a helpless invalid. On one occasion she fell in the fire and narrowly escaped a terrible death. She had constantly to be watched and guarded.

When the operation was first proposed by Dr. Kleinschmidt the girl was ready to have it done, as it offered some hope out of the darkness and suffering of her now hopeless life; but her mother said, "No, she would see her die first." But they finally came and begged for it.

Dr. Hamilton has answered Dr. Smith's question in regard to whether a "cystic ovary" can be healthy. I believe such ovaries are pathological. The good Lord never made any woman with ovaries in a state of "cystic degeneration," a term which the microscopists and pathologists are now ridiculing. Men may have mistaken graafian vesicle for a cyst, and a corpus luteum for evidence of degeneration. So have the microscopists mistaken ascetic for ovarian fluid, and operations have been performed on their recommendation when no ovarian tumor was found. So they have condemned patients to death on account of supposed cancer, and the patients have lived to laugh at their mistakes. A pathologist finds many curious post-mortem appearances. His "hindsight is better than our fore-sight" sometimes. He has the advantage of us. He can deliberately open an abdomen with no fear of hæmorrhage or injuring an intestine; indeed, if the intestines are in his way he punctures them and lets out the gas. He looks at the ovaries and tubes of a woman who has been dead twenty-four hours or more. They are pale as death. He sees no congestion or quivering nerves, no inflammation, there is no tenderness, or outcry when the slightest touch is made. There is no complaint of the thousand and one symptoms which this congested, tender, sensitive, live, palpitating organ gave rise to during life, and the pathologist says there was little or nothing the matter; and the microscopist, after keeping an enlarged, congested, much reddened cystic ovary in alcohol a month or two, sees very little in the pale, shrunken, shriveled organ before him to have occasioned so much trouble; but let them treat a few of these cases for eight or ten years without benefit, and have them *plead for something*—no matter how uncertain, no matter how risky

[1] Date not given in official report.

or dangerous, which offered *any* hope, or had *ever cured anybody else*—to be *done* for *them*, and their views about these matters might undergo some change. I operated on this girl after reading the favorable cases reported by Gordon. I thought his a precedent which I could follow. Surgeons do more than this, when the spleen or the kidneys, or portions of the stomach or intestines have been found the seat of otherwise incurable disease; they have opened the abdomen and removed the offending organs, in whole or in part when there were fewer cases as precedents than I had to follow, and the operations were more dangerous and more frequently fatal. I think I am prepared to say that if there were twenty or fifteen or even ten such cases as the one I have reported, cured by this operation, and I was certain that mine was the counterpart of them, and the patients fully understood the nature of the operation, its dangers and uncertainties, and still appealed to me to operate, that, being conviced that there was a fair chance of recovery, I would give it to them, notwithstanding the objections of a thousand physicians who had nothing better to offer.

I think Dr. Hamilton did right to operate. I am not sure the sequel will show. I saw his patient and treated her for some time in his absence. She had no uterine disease; she had no painful menstruation; no displacement which had not been corrected. She was growing worse; she was in a terrible condition. Much anxious thought was given to her case. I think she actually stood in more danger from the chloral and chloroform necessary to secure quiet or sleep for herself or her family, than she did from the operation. I think more patients have died from the effects of these remedies given to relieve pain or stop convulsions than from the effects of this operation.

Dr. Thompson advises more caution, a longer consideration, a more careful weighing of symptoms and persistence in treatment before operating. I agree with him that this is good advise, and *should* be done, and I have no doubt *is* done, in all cases, before the operation is even thought of. *I agree to all this*, but *when* shall we stop pursuing a course which produces no results; where shall we draw the line? Shall it be at three years, or five, seven or nine years of ineffectual treatment, when, in the meantime our patients are growing worse and the probability lessening that they can be finally cured by *any* means. In the case to which the Doctor refers, he "stands hesitating" what to do, resisting the clamorous appeals of that poor suffering lady for an operation which offers a *fair* chance of cure, and doing nothing in the meantime which does her any good. How long will he think it wise or necessary to "hesitate?" How many *more* years must she suffer before he will consent to do what she and her husband, with a full, and clear understanding of the nature of the operation, its liability to kill her on the table, or within a week, or, if she gets over it, to fail of a cure; while on the hand so many others *have* been cured, that there is a fair prospect that she may be cured also? I saw the lady at his request and examined her carefully and took notes of her case. Her symptoms all date from a confinement about nine years ago. Her trouble, to my mind, is ovarian and uterine. She has been treated about nine years; has been under the care of many physicians, some of them as long as two and three years at a time; she has had several surgical operations performed upon her anus, rectum and cervix uteri—the last by Dr. Thompson. She is worse to-day than at any time. She is a helpless wreck; a house-bound invalid; has "no pleasure in life," and is a constant care and expense to her husband and friends. The Doctor says he has *just* discovered that she has an acutely anti-flexed uterus, and thinks her symptoms may all be due to this condition and so "hesitates" to operate. I say give her three months treatment with stem pessaries or any other means, straighten her uterus, and fully satisfy himself as to whether this treatment will cure. Then call a consultation, and let the materia medica be exhausted for three months or six months more if she will stand it, and *then* if not cured, as I hope she may be; after ten years in all spent in useless treatment, I should say then remove her uterine appendages.

Dr. Thompson would not wait ten years or two years or six months before operating on any case in general surgery where there were so many indications that an operation would benefit his patient. He says he wants the most positive and unmistakable evidence that the ovaries are badly diseased before he thinks it right to operate. He perhaps forgets that the symptoms for which we sometimes operate are all produced by the periodic congestion and activity of the normal ovaries when the tubes or the uterus may be so diseased as to prevent menstruation. Indeed Batty's first case was in a patient who had a congenitally small and undeveloped uterus, and where the ovaries were normal and the pains of the "unrelieved menstrual molemen" had nearly produced insanity. Indeed he first named the operation "normal ovariotomy." Marriage was suggested by several speakers as a means of cure. This might do in some cases and probably has worked wonders for many. But in the case just referred to, marriage produced all her troubles. Many of these cases originate from an unfortunate labor or abortion. Who would marry such a girl as Dr. Hamilton operated on, or the lady whose sad case I narrated this evening—a lady having convulsions two weeks out of every month? Two of the ladies upon whom I operated were engaged to be married, and in consequence of their long continued and uncured troubles the engagements were broken off; but since their restoration to health by this operation, I hear some talk of the possibility of married bliss coming to them at an early day.

In another case, a patient upon whom I performed Tait's operation has been "married thirteen long weary years without ever having become pregnant." It is not fair to say these patients are "mutilated and unsexed." They were virtually unsexed by the disease before the operation, and the removal of the cause of all their pain and years of sickness has made them healthy, happy, and useful members of society.

Some cases fail to be cured, and some, very few, die as the immediate result of the operation. But I venture to say that there is not an operation in surgery to-day, as grave as this, which is attended by as

few fatal results or as few failures to cure. Dr. Thompson does not refuse to perform tracheotomy because so many cases operated on die, or fail of a cure. Surgeons do not refuse to cut off legs because some patients die who are operated on, or to cut out cancers when they must be in great doubt whether the disease will not return, and whether they are really doing their patient any good.

Dr. Busey in his eloquent address "endorsed Dr. Thompson's remarks," and as I have replied to those remarks, I need not repeat. This operation is opposed because it has not cured everyone upon whom it has been performed. Have its opponents cured everyone whom they have treated? I have no doubt they, in common with other good physicians, have had some failures, and perhaps some deaths, and yet they don't apply the logic of their arguments to themselves. They lose a patient in childbed perhaps, whose uterus they have washed out and who has taken large doses of quinine, antipyrin, etc., but the next case they have they treat in exactly the same way. They don't make eloquent speeches against "washing out the puerperal uterus in every case" with solutions of the bichloride of mercury, or some other antiseptic, because some have died notwithstanding its faithful use, and a few *because* of its too faithful use, of mercurial poisoning.

Operators are blamed because they do not show "permanent results." It would make this reply too long to go into the statistics of this subject, but there are numerous examples of as permanent results as can be shown from an operation performed for the first time in this country by Battey in 1872—only fourteen years ago; no one can say how these patients will be twenty years from now. Battey's case operated on fourteen years ago he *reports as cured*, and she remains *cured* up to the present time. That is as far back as we can go. Dr. Busey says the life of woman has not been prolonged by this operation. How can he know that? He intimates that more years have been lost than saved by it. He cannot demonstrate that, while I could say much on the opposite side of lives certainly saved in cases of myoma of the uterus, pyo- and hydro-salpinx, hæmorrhage, etc.; but we were especially discussing the propriety of this operation in cases of prolonged and aggravated hysteria and nervous diseases. I admit, and have always admitted, everybody admits, that there is less certainty of a cure in this class of cases than in those just referred to. So there is less success with any other mode of treatment, or they would not continue uncured for so many years and then *finally*, as a *last resort*, come to this operation. No one recommends it; no gynecologist would think of operating until his brother the general practitioner had had several years' opportunity to cure and *had failed*. I think some of the treatment these patients are subjected to and the "hesitating" and let-alone policy as dangerous as oöphorectomy. For instance, my patient came near a terrible death by falling into the fire, in one of her attacks of menstrual epilepsy, while the doctor was "hesitating" what medicine to give next. I think Dr. Hamilton's patient came near being poisoned several times with large doses of chloral. And I venture the hint, I don't know, of course, if it is true, but I fear it is, that as many of this class of cases, who have required most of a large family to hold them during their convulsions, and in one of my cases a good part of the neighborhood, and this continuing a week or two out of every month for several years, have died from the effects of overdosing with morphine, chloral or chloroform, as ever died from the effects of the removal of the uterine appendages.

Drs. Smith and Busey say "this operation is becoming too popular, too many operations are being performed, and that unless a halt is called no woman with nervous diseases will be safe; that the profession ought to call a halt." It may be true, and I think it is, that men have tried to do more with this operation than they have succeeded in accomplishing in some cases. So they have with the cervix operation and with many others. Notes of warning have gone up against Emmet's operation, which the best gynecologists of the world have united in calling "the greatest improvement of the age," and yet it is done too often, by rash and inexperienced men and in inappropriate cases; harm has been done and perhaps a score of women killed by it. If what some say is true, sterility has been produced by it. And yet trachelorrhaphy has its undisputed field, so has oöphorectomy. I do not recommend it, as would be inferred from this debate, for the cure of all nervous troubles. I don't want to castrate all women who have painful menstruation or hysteria, but I do say that occasionally a case occurs, which has been under treatment of various and many kinds for many years, where everything else seems to have been faithfully tried and *failed*, which becomes finally a candidate for castration.

The cases are rare, but they exist, and I am sure I am right when I say, consider it as a *last* resort, do everything else *first*, be years about it if you like, three years or ten, but if you *then fail*, and they are getting worse and desire it, operate, or turn them over to some one else who *will operate*, and give them this chance. If I had the time, I would like to speak of the fashion of considering these operations failures if the fullest effect desired is not secured at once, as if by miracle. The change of life is produced by it, artificially, but it must be remembered that this change comes about slowly, when in health even, and those who have operated most, say that they do not consider that they have failed, until at least two years have gone by since the operation, and then, nerve centres which have acquired the habit of exploding in these dreadful convulsions which have been going on for years, do not at once cease to act in this way, and a complete cure cannot immediately occur when the prime cause of the trouble has been removed.

I saw a case of epilepsy which was originally caused by the presence of a tapeworm, continue for a year after I had secured its expulsion—after this time the cure was perfect. The opposition to this operation shown by Emmet and others, when my paper on this subject was read to the American Gynecological Society last year, was referred to.

I reported *four* operations as the basis of my paper, and *all I* had then seen fit to perform, while Dr. Baker, in saying it should not be done too often, referred to *eight* or more cases recently done by himself, and Dr. Lusk; who recommended so much caution, wrote me, and I have his letter now, in which he says that he did this operation twice in the first week after the Society adjourned. Dr. Wilson, of Baltimore, said in that discussion that "he would say only a few words in addition to what had been said on Dr. Johnson's paper, as he had expressed his views most fully and accurately." See American Gynecological Society Trans., p. 138, vol. x, and again on p. 131 Dr. Sutton said, "It is hardly necessary to compliment Dr. Johnson on so good a paper as this one, so full of practical detail and practical suggestion, and one proving the great merit of the treatment of the cases which he has given in detail," and in closing his speech he said, on page 132, "I congratulate Dr. Johnson upon the success which he has obtained in these cases and I bid him Godspeed in his good work." Dr. Emmet, as is well known, does not approve of this operation for dysmenorrhœa or nervous ailments. He said on page 145 of that discussion, however: "I think it has a large and useful field in other cases."

I was pleased that Dr. Busey in his remarks virtually approved of my operation, after an examination of the specimens, and that he disclaimed any reflections. I do the same most heartily, and in this reply, to be read by the Secretary after I have gone abroad, I am mainly on the defensive in closing the debate.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, July 16, 1886.

THE VICE-PRESIDENT, HENRY T. BYFORD, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

DISCUSSION OF DR. F. E. WAXHAM'S PAPER ON OCCLUSION OF THE OS UTERI AS AN IMPEDIMENT TO LABOR, WITH A REPORT OF TWO CASES.

(Read at the May meeting.)

DR. W. W. JAGGARD said: From the very clear description of Dr. Waxham's case, I infer the condition was that described by Nägele under the term, *conglutinatio orificii*, an uncommon complication of labor, but seldom indicating incision. Usually, pressure of the finger is sufficient to open the os.

A more serious condition is that described by Schmitt, under the term *conglutinatio organica*. The cervical canal is obliterated to a variable extent. I had a case, illustrating this condition, under my observation in Professor Spaethe's words during the winter of 1882. The lower half of the cervical canal was obliterated. Radial incisions were made around the *os externum*, and the canal was dilated with the index finger. Forceps were subsequently applied. The case was reported in the *Medical News*.

DR. JOHN BARTLETT said: I have nothing of interest to offer directly pertinent to the present discussion. But I have rather recently attended a case which I deem so nearly akin to those reported by Dr. Waxham as to justify me in mentioning it.

Mrs. Anderson, 37 years old, came under my notice about three years ago. Five years since, she felt a burning pain in the nose and about the womb. At the same time her menstruation increased in quantity until in the course of a year, it became profuse. Because of these difficulties, she sought relief from a quack. For the purpose of removing a cancer, which this pretender diagnosticated, a most violent caustic was put into the nostrils and applied to the womb. One year afterwards the tissues injured by the corrosive had healed; a violent uterine pain remained, and the flow had again become excessive. She applied to Dr. A. R. Jackson, who made an operation for the relief of the *atresia vaginæ* which he found existing. Although the operation was thorough, contraction recurred; so that when she was admitted into the Woman's Hospital in 1883, her condition was probably about the same as it was prior to Dr. Jackson's treatment, Dr. Mary H. Thompson operated upon the patient, opening thoroughly to the *os uteri*. Contractions, however, very soon reformed in the vagina; in October, 1885, her condition was serious. Her pulse was weak and frequent; neuralgic pains about the pelvis were nearly constant, and superadded to these older symptoms were those suggesting pregnancy. The uterus was enlarged and menstruation had ceased for three months. Of her condition at that time, Dr. Thompson writes: "The vagina was closed more perfectly than before. Not an opening could be seen in the occluding disc, which was only one inch from the *ostium vaginæ*. By examination through the rectum, it was ascertained that the uterus was enlarged, especially toward one side of the body." The distress of the patient, the apparently complete closure of the vagina, the nonappearance of the menses and the peculiar enlargement of the womb suggested either retained menstrual blood or some form of pregnancy. After a consultation, Dr. Thompson proceeded to open up the canal—at the time supposed to be perfectly occluded—between the uterus and vaginal *cul-de-sac*. In reality, a very small opening still existed; this was enlarged carefully by incision and distension until the *os uteri* was thought to be easily in communication with the remains of the vagina.

One month after the operation I was called upon to visit the patient. On the preceding night at a certain hour, most violent pains, as those of childbearing, had come on, and had continued despite of anodynes, for some five hours. The pains had now at the same hour as the night before, returned with increased violence. Not to go into details, I will say that the symptoms pointed strongly to some form of pregnancy. In view of the serious character of the case, I called in consultation on the next day, Dr. R. G. Bogue. We left the patient still in doubt as to her true condition. During the following night, I was again summoned; the exact resemblance of the pains to those of labor, and the now recognized hardening of the swelling above the pubes during these pains, made it quite certain that pregnancy ex-

isted, and that the contractions would finally lead to the extrusion of the fœtus from its sac *per vias naturales*, or otherwise. Upon careful examination, the vagina was found to be shut off about one inch from the *ostium* by a hard, firm and thick disc of cicatricial tissue. Toward one circumference the small opening detected and enlarged by Dr. Thompson a month before was recognized. By rectal examination, what seemed to be the *cervix uteri* was reached, three quarters of an inch beyond the upper face of the cicatricial disc. Connecting the disc and cervix was apparently a tube of tissue much smaller in circumference and thinner than proper vaginal walls. The pains continuing with regularity. Dr. Bogue and myself concluded to assist delivery. Slight incisions by means of the bistoury were made in the circumference of the opening in the cicatricial disc, a metallic dilator was then introduced, and when some dilatation had been effected, a modified Barnes dilator of very small size was inserted. Within an hour, by the occasional use of the knife and the continual tension of dilators, the disc opening admitted for a little distance the end of the finger into the remnant of the vaginal tube, above the disc. By the point of the finger pressed firmly onward, could now be recognized a hard body which was taken for the *cervix uteri*. With a little more dilatation of the disc opening, it was perceived that the hard body was the fœtus, and that the *os uteri* was healthy and dilating in a normal manner, the membranes being unruptured. As soon as the opposing disc opening was expanded to a size presumed to be sufficient to permit of the passage of the head, the membranes were ruptured. It was then discovered that the shoulder presented; by aid of suitable instruments the child was turned and in the somewhat too vigorous efforts at delivery the body parted from the head, the latter remaining *in utero*. This accident in such a case, with an extra, entirely rigid os precluding free procedure through the *os uteri*, ordinarily would be regarded as unfortunate, I looked upon it as a favorable step toward delivery, confident that by means of a suitable vectis the head could be easily scooped through both of the opposing ora. In fact, the head was readily so delivered, and the placenta falling over the os uteri was removed with the same instrument. One of the symptoms that confused the diagnosis on the first day of the appearance of labor pains was the unusually large, rapidly attained size of the supra-pubic tumor. This symptom was now explained, for an examination to determine if the patient was entirely "cleared" revealed the presence of a second fœtus presenting by the head. The vectis was applied and the fœtus at once withdrawn, as was also in like manner the second placenta.

The labor revealed the true anatomy of the injured parts. The patient desired that the passage through the disc should be kept open, but inasmuch as the os uteri was almost immediately behind it, it was deemed useless and harmful to make the attempt. Within three months the dilated opening in the disc had contracted to a size but little greater than that observed before the miscarriage.

Dr. F. E. Waxham said: I would simply allude to the great resemblance in the case coming under my care, between the uterine tissue and the fœtal membranes, especially in those cases in which there is but a small amount of amniotic fluid, and I can see how very easy it would be to do permanent injury to the mother by rupturing the uterine tissue by a pencil or some other sharp-pointed instrument, when, perhaps, by more extended and careful examination, it would be found that simple dilation would be sufficient. In the case reported, the knowledge that the amniotic fluid had been escaping for several hours was sufficient evidence to me that there was an os, and it was also proof that the tissues presenting were not membranes, but the uterine tissue. But the great trouble was to discover the os, and I assure you, it was difficult indeed. The os was present in the center of the presenting mass, and yet we could not discover it. It was impossible for me to do so, and it was only after a continued, careful and searching examination that Dr. Nelson was enabled to detect the very slight dimple which was present.

DISCUSSION OF DR. HENRY T. BYFORD'S PAPER, ENTITLED "A STUDY OF THE CAUSE AND TREATMENT OF PELVIC HÆMATOCELES."

(Read at the June Meeting.)

Dr. T. D. Fitch said: I have had very limited experience with operative procedure in this class of cases. As a rule, I feel like praising the bridge that has carried me safely over. My usual treatment has been the expectant plan, or trusting to resorption of the clot. Resorption occurs in other tissues of the body, the leg or arm, where you would not think of opening the cavity and turning out the clot. It would be a very bad principle in surgery, I think. My experience has not been sufficient to condemn the operation entirely, but I feel like trusting to the safer plan of the expectant treatment. I have never operated in more than two or three cases, and would not have operated in them had not there been a mistake in diagnosis. One of these cases was a lady at Jefferson, who gave a history of cellulitis. There was softening and fluctuation in the tumor presenting. I was called in consultation by the attending physician. The symptoms were those of cellulitis, resulting in abscess. The aspirator was used and a very small amount of pus was drawn off, and then a larger amount of disintegrated blood. All was drawn of that could be, and the woman recovered, no bad results following the aspiration. No drainage was instituted, and no scooping out of the blood clot was performed; there was no special treatment except on general principles, and the vaginal injections of antiseptic fluids. The opening was not enlarged, the sac was not injected, nor washed out. The opening made by the aspirator needle probably closed up so that no air was admitted, and no decomposition or blood-poisoning occurred.

Another case was one in which I assisted in an operation for supposed extra-uterine pregnancy. Two distinguished Fellows of this Society were present and concurred in the diagnosis. It was decided to open the tumor through the vagina with the galvano-cautery knife, and when this was opened, there

poured out of it a gelatinous fluid, as white, and as clear and pure as could be; it looked to me very much like soft boiled rice. It was a clear white, and perfectly inodorous. The sac was washed out with antiseptic fluids, and the patient treated on general principles; I think no drainage was used. The sac was not scooped out; nothing was turned out except the tablespoonful or two of gelatinous fluid, of which I spoke.

Another case I might mention, in which the attending physician and myself (I was called in consultation) diagnosticated an abscess; opened it with the aspirator, and found that it was an hæmatocele. I believe the expectant plan of treatment is preferable to operative interference. I think a larger percentage of cases would recover under this treatment.

DR. JOHN BARTLETT said: I will take occasion to refer to a fatal accident that once came under my observation, which tends to show the necessity for the greatest care in opening cavities, *per vaginam*, whether resulting from hæmatocele or cellulitis. A patient was greatly reduced by long continued pelvic abscesses. It seemed to be one of those cases in which an operator is called upon to make a determined attempt to reach, evacuate and curette a chain of abscesses found to exist within the pelvis. Several collections of matter were opened, and it was supposed that the object of the operative procedure had been happily accomplished. The final washing of the cavity with carbolized water was in progress when suddenly, the patient fell into a profound collapse; respiration ceasing and pulsation at the wrist failing. This condition was regarded as an accident from ether. Every effort at restoration was unavailing till a Faradic current was passed through the phrenic nerves at proper respiratory intervals. The patient then gradually rallied, and the danger was thought to have ceased. On the following morning the carbolized injection was repeated by an assistant; a fatal collapse immediately ensued. Post-mortem examination revealed a small opening through the roof of the pelvis, and the presence in the peritoneal cavity of the injected fluid. If the Society will pardon a digression, before closing I will take occasion to refer to a symptom of hæmatocele, which would seem to be as rare as it is suggestive. In one case, associated with this condition, I observed the whole surface of the abdomen below the navel, to present an ecchymotic appearance as from the extravasation of blood after an injury. The patient was alarmed at the "black and blue" appearance, regarding it as a sign of "mortification." It existed for weeks and disappeared, *pari passu*, with the pelvic extravasation.

DR. W. W. JAGGARD thought the ruptured cyst of extra-uterine pregnancy a more frequent cause of retro-uterine hæmatocele than the text-books would lead one to believe. Gallard has emphasized the importance of the operation of this etiological factor. He[1] makes a statement to the effect that independently of traumatism, almost all hæmatoceles are caused by the ruptured cyst of extra-uterine pregnancy. Such a broad statement naturally provoked salutary criticism. More recently, Veit,[2] of Berlin, has collected 146 cases of hæmatocele, of which forty cases, or 28 per centum were probably due to the ruptured cyst of ectopic gestation. Veit's estimate does not appear extravagant.

He would like to inquire of the author of the paper, what was the indication in the case reported for operative interference? The indication had probably been stated, but through inattention, he did not remember it. A small non-suppurating, retro-uterine hæmatocele of six months' standing was not, *per se*, an indication for any operative interference.

Any discussion of the surgical treatment of retro-uterine hæmatoceles, would be incomplete without some mention of Dr. A. Martin's plan of treatment in cases of extra-peritoneal hæmatoma. Laparotomy is performed, eventration of the intestines effected, the sac incised, evacuated and curretted, and subsequently united by sutures, drainage is maintained *per vaginam*. In Martin's hands, this operation has been perfectly successful in six cases.

DR. C. T. PARKES said: I do not think I have anything new to offer on the question of treatment of hæmatocele. My experience embraces only three cases. The first was a lady whom Dr. Fitch saw with me about a week after the initial symptoms, which present themselves in these troubles, had appeared, and we concluded to make an opening through the *cul-de-sac* of Douglas. I used the Paquelin cautery for the purpose of opening up the mass, which was not very extensive. The principal symptom which led us to think it was necessary to resort to interference, was the evidence of the presence of probable suppuration. The lady had been having slight chills and some corresponding rise of temperature, and we thought it best to be certain whether or no the mass had decomposed and broken down, so we opened it with the cautery, and quite a quantity of grumous, broken down blood, with clots came out. The lady was relieved of her pain and distress. We introduced a drainage tube, and through this tube passed a large catheter as long as the opening would permit, and washed out the cavity every day and followed it up for a long while, with a diminution in the size of the mass, until it got so that it was merely perceptible above the pubes, then the chills came on again more severely, and after suffering for a month or six weeks she finally died of septicemia. In that case I was satisfied from the fact of being able to fill the cavity apparently, under the force of hydrostatic pressure, and then have something give way, and the fluid rapidly disappear, that we had a series of cavities which were opening into each other. I think if I had such a case to manage now I should do differently. I should use thorough antiseptic precautions, and care at present; such treatment was not then deemed necessary. The next case, a very interesting one, happened last winter; I saw the lady four or five weeks after she was taken ill. She was taken as though she were going to have a miscarriage after having missed menstruation twice, and when I saw her she was in an extreme condition of collapse; upon examining the abdomen, it was found full of

[1] Leçons Cliniques des Maladies des Femmes. Paris, 1873. P. 635.

[2] Die Eileiterschwangerschaft. Stuttgart, 1884. P. 14.

something, dull on percussion, resonant above, and to the sides; on digital examination the ordinary signs of hæmatocele were present. This woman was in such a weak condition that I could not bring myself to the idea of interfering, and tried to support her and wait for events. I attended her two weeks, while she varied from one condition to another, all the time life hanging by a thread. In the third week, on examining her abdomen, I thought I detected fluctuation, and in two or three days was certain of it. I aspirated in the *linea alba* midway between umbilicus and pubes, and at first withdrew a quart of blood, but, although I was satisfied there was more there, I did not repeat the aspiration that day. Two days afterwards I aspirated again, and withdrew two quarts. She began to improve from that moment; I merely put her on tonics and supporting treatment; this was in February. I saw her about a month ago, and she was going about the house the same as any one else. The third case was a little later in the same year, a lady who had been bleeding a little for some time, with the presence of signs of conception of two months' date. I made an examination, and was satisfied that I detected to the right of the uterus a mass as large as one's fist, easily reached by manipulation internally and externally, tense to the touch, and elastic. I diagnosed a probable hæmatocele, kept her quietly in bed, but did nothing special for her. The occurrence of this tumor was accompanied by extreme shock, prostration, pallor of the body and symptoms of collapse. She has now entirely recovered without any interference whatever. That last case led me to think of some of the reports I have read about surgeons being called to see a patient in collapse, finding she has flowed a little, with a history of probable pregnancy, making an examination, and discovering a little tumor, diagnosing extra-uterine pregnancy, using electricity and curing the patient. It seems to me there may be a possibility of there being a mistake in some of these cases of extra-uterine pregnancy that are cured so readily by the use of electricity. They are becoming very frequent. I must say, that it was a very difficult matter for me to decide in this case, whether it was extra-uterine fœtation or hæmatocele, still I am satisfied that it was an hæmatocele.

Dr. H. T. Byford said: Before closing the discussion, I would like to add the following case to the series reported in the paper:

Case VI.—Mary H., a German servant girl, 25 years old, was taken sick with pains about the lower abdomen, nine months ago. The attack, which came on after a menstrual period, kept her in bed little of the time, but did not pass off. In six weeks, her menses came on and lasted two weeks. The bleeding ceased for a few days, then returned and had continued, in varying quantity, until stopped by ergot about a week before I saw her. Vesical irritation was an almost constant symptom. Up to that time, she had tried to atttend to her work, but then gave up her place. She told me, a little over a month ago, when I first saw her, that she had felt worse since taking the medicine. The great pelvic tenderness subsided rapidly under the "absolute rest" treatment, and in less than a week afterwards, I was able, without paining her, to completely circumdigitate a large boggy or semi-elastic tumor in the right broad ligament, extending behind the uterus from a level with the internal os upwards, and reaching into the left broad ligament, where it felt harder and nodulated. The uterus was anteflexed, displaced anteriorly, and to the left (leaving only room enough between the cervix and the pubes for the index finger,) and intimately attached to the surrounding mass. The probe entered three inches, turning forwards. After keeping off her feet, although not in bed, using hot douches, iodine applications to the abdomen, iron internally, and having glycerine plugs applied about every three days for three weeks, the tumor had become harder, somewhat nodulated in places, and perceptibly smaller. She had felt quite well again until the last few days, when she undertook to resume her domestic duties.

This case shows well the positive benefit of rest, and the positive harm that is sure to result from want of it. Its history is similar to the history of many such tumors which go on to suppuration, but which, with proper treatment, would have been promptly absorbed.

The unfortunate case related by Dr. Bartlett bears witness to the dangers of the curette in pelvic hæmatoceles, and is probably one among many somewhat similar ones that have not been reported. The necessity of a large opening, perfect drainage and great antiseptic precaution is vividly shown by one of the cases recited by Dr. Parkes. His view as to the liability to the formation of pus pockets is corroborated by the sudden discharge of half an ounce or more of pus on March 26, in the case of Mary St. —, followed by the rapid sinking of the uterus back into a natural position. This pus pocket, had the operation *not* been performed, would probably have formed and pointed upwards in the direction of the least resistance, and would have become an abdominal abscess, and a serious thing to manage. I quite agree with Dr. Parkes that simple hæmatoma and hæmatocele are too often thought to result from extra-uterine pregnancy, and think it is partly the result of Gallard's theory that all non-traumaic cases are extra-uterine pregnancies, a theory which has done its good and has had its days. The intensity and persistence of the local symptoms, the passage of the decidua, and the past or present characteristic symptoms of the pregnant condition should usually prevent such a mistake.

I think, with Dr. Jaggard that Bandl would have us operate too early; I only claimed that Bandl's views were a great advance in the therapeutics of pelvic effusions, in that, while recognizing the dangers of early interference, he does not allow the fear of inducing septicemia to intimidate him into waiting until septicemia has already accomplished its mischievous, and perhaps fatal work. The reason why Bandl's latest views have had so little apparent effect upon the profession, is that they have only been before the profession at large for a few months. I had come to the conclusion that with our present knowledge of antiseptics we need not be frightened out of

opening up these accumulations, and had acted upon it, before I knew of Bandl's views; and so had many others whose veneration for long established authority had not overpowered their individual judgment.

A. Martin's method of operating for hæmatoceles and hæmatoma is *one* method, but that it is *the* method cannot be maintained upon scientific grounds so as to convince the profession; nor has it as yet been so proved by its success. As to the frequent bunglesomeness of operations *per vaginam* and *per rectum*, there is scarcely to be found an opportunity for the bungler like the performance of laparotomy for pelvic disease. I doubt if I exaggerate in saying that half of the abdominal sections are done in a bungling manner, especially when compared to those of Martin and a few others.

In my paper I advocate the expectant plan of treatment, and have used it, and, so far succeeded with it, in all of this series of cases except one. That case was operated upon because the conditions for a cure without an operation were not attainable; because even if attainable, they would have taken too much time to restore the patient to usefulness; and because if properly done, the operation in such a case is almost devoid of danger. I regard it as a good illustration of when we may operate in case the expectant plan does not afford relief. In case VI, Mary H., which I have just reported, I shall use every effort to do without surgical interference, because the interior of the sac cannot be easily and safely reached.

Protheroe Smith, M.D., M.R.C.P., of London, was then elected Honorary Fellow of the Society.

MISCELLANEOUS.

CHARLESTON PHYSICIANS IN GREAT NEED.—We are permitted to present the following extract from a private letter from one of Charleston's best known physicians to a medical gentleman in this city:

"We are distressed," he writes, "almost beyond endurance. Our women and children are our sources of anxious solicitude. May God protect them in the open field, tenting in the night air! My entire family—wife and four children, the oldest eleven years of age—are out of house and home, like hundreds of other sufferers." . . .

We think little more need be said to show the necessity of speedy aid for the sufferers among our own brethren in Charleston. There are no doubt many cases of individual want among medical men and their families, for while their services are in demand, and they are busied in attending to those suffering from injuries and the results of exposure, yet they are seldom paid, at least in cash. Their families are homeless and must be provided for, but food and shelter are not to be obtained without ready money in such times, and ready money the physician but rarely obtains.

We therefore appeal to our readers throughout the country to help their brethren in South Carolina in this their hour of need. We are accustomed, by our very calling, to help others when in distress, and let it not be said that we are indifferent to the sufferings of those in our own ranks. Now is the time to help them, and he who gives quickly gives twice.—*N. Y. Medical Record*, Sept. 11, 1886.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The Section for Clinical Medicine, Pathology and Hygiene of this Branch of the Massachusetts Medical Society will meet on the second Wednesday of each month after October 13. It is a noticeable feature of its meetings that marked attention is paid to hygiene and public health. At the meeting on June 8 Dr. D. A. Sargent, of Harvard, read an exhaustive paper on "The Effects of Military Drill on Boys," which will be published in the next issue of THE JOURNAL.

DR. THOMAS ALEXANDER MCBRIDE, one of the most brilliant young physicians of New York, died at sea, on August 31, of acute Bright's disease, while returning home from Carlsbad, where he had spent most of the summer under treatment for Bright's disease.

DR. CHARLES DUDLEY HOMANS, of Boston, died at Mt. Desert, on September 1, in his sixty-first year. His death is thought to have been due to disease contracted in an operation two years ago.

CREMATION AND ROMANISM.—The Roman Holy Office has forbidden Roman Catholics to belong to cremation societies.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 4, 1886, TO SEPTEMBER 10, 1886.

Major P. Middleton, Surgeon, assigned to duty at St. Francis Barracks, St. Augustine, Fla., as Post Surgeon. (S. O. 126, Div. of the Atlantic, Sept. 2, 1886.)

Capt. L. A. La Garde, Asst. Surgeon, upon departure of Third Infantry from Ft. Ellis, M. T., to proceed to Camp Sheridan, Mammoth Hot Springs, Wyo. Ter., and report to the commanding officer for duty, relieving Asst. Surgeon Pilcher. (S. O. 87, Dept. Dak., Aug. 27, 1886.)

First Lieut. Wm. J. Wakeman, Asst. Surgeon, granted leave of absence for one month, with permission to apply for three months' extension, to take effect when his services can be spared in the Dept. of the Platte. (S. O. 207, A. G. O., Sept. 6, 1886.)

First Lieut. James E. Pilcher, Asst. Surgeon, when relieved by Asst. Surgeon La Garde from duty at Camp Sheridan, to return to his proper station, Ft. Custer, M. T. (S. O. 87, Dept. of Dakota, Aug. 27, 1886.)

First Lieut. Phil. G. Wales, Asst. Surgeon, granted leave of absence for one month, with permission to apply for an extension to Nov. 5, 1886. (S. O. 70, Div. of the Pacific, Aug. 31, 1886.)

First Lieut. Wm. B. Banister, Asst. Surgeon (recently appointed), to report to the commanding general Dept. of Arizona for assignment to duty. (S. O. 208, A. G. O., Sept. 7, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING SEPTEMBER 11, 1886.

Woodruff, C. E., Asst. Surgeon, ordered to receiving ship "Vermont," Oct. 4, 1886.

Atlee, L. W., Asst. Surgeon, detached from the "Vermont" and ordered to the "Quinnebaug," per steamer of 25th inst.

Bogert, E. S. Medical Inspector; N. McP. Ferebee, Surgeon; C. Biddle, P. A. Surgeon; H. B. Scott, Asst. Surgeon, detached from the "Trenton" and placed on waiting orders.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, SEPTEMBER 25, 1886. No. 13.

ORIGINAL ARTICLES.

VENOUS BLOOD TUMORS OF THE CRANIUM

in Communication with the Intra-Cranial Venous Circulation, Especially the Sinuses of the Dura Mater.

BY WM. M. MASTIN, M.D.,

OF MOBILE, ALA.

(Continued from page 320.)

III.—TRAUMATIC CLASS.

My researches in the traumatic group have been rewarded by the gathering together of several well authenticated and important records.

One of the most typical, as well as the earliest, instances, is that related by Percival Pott[8] ("Chirurgical Works," first Amer. from last London edit., vol. i, p. 132, Phila., 1819; also French edition, t. 1, p. 151, 1760):

A boy, 8 years of age, son of a Jew merchant of this city, received a blow on his head with a stick. This made him giddy for a few minutes, but there was no bleeding, no external wound, and but little pain, and he concealed the fact of there being a swelling over that portion of his head until it was discovered by his barber. In the centre of the top of his head was a tumor almost the size of a walnut; indolent, had a dull kind of pulsation, and palpably contained fluid. In the presence of Serjeant Amyand and Mr. Shipton the tumor was divided with a knife and a quantity of blood discharged; but when the swelling was emptied it was found that the blood continued to flow, plainly not from the scalp wound, but from the bottom of the cavity. Examination now showed that the saggital suture was fractured, and that a portion of the displaced fragment of bone was forced into the sinus, and by the sides of which the blood issued forth. Attempts to extract this fragment failed. By advice of the consultants, a small perforation was made on one side of the suture, but through this the point of the elevator could not be introduced so as to remove the broken piece. and so the trephine was applied on the other side of the suture, but with like result. At last it was decided to risk the hazard of wounding the sinus (which was, indeed, already wounded by the broken bone), and enclose the suture within the circle of the trephine. This was done, but the button of bone came away in pieces, and left the original perforating fragment still piercing the sinus. This fragment being withdrawn by means of forceps, a flux of blood followed, but a dossil of dry lint controlled it. The patient recovered.

There are very many cases similar, if not exactly analogous, to this case, to be found in surgical literature; and among the most striking of which are those mentioned by Guthrie (Commentaries on Surgery, etc., p. 349, Amer. ed.), and M. Mouton (Mem. Royal Acad. Surg. of France, Sydenham Edition, p. 8).

M. Azam (Dupont, op. cit., p. 20) reports two cases of this accident which came under his observation, as follows:

C.,[9] age 22; miller, robust; entered the Hôpital Saint-André, service of M. Hirigoyen, Nov. 11, 1850. Situated on top of the frontal region, a little to the right of median line, was a tumor of the dimensions of a large nut. It was irregularly round, manifest fluctuation, but no discoloration of skin. Gentle pressure with the palm of the hand reduces it completely in two or three minutes, after which the skin remains empty and flaccid, and is also very thin and soft. Hence one can easily recognize an irregularly circular depression across it, with salient and unequal edges. The patient reduces it easily himself, and it disappears when the head is thrown backward and reappears with the forward inclination. The forward posture cannot be maintained for any length of time on account of vertigo, which accompanies this position. No bruit or pulsation, but seems a little more tense during the respiratory movements. I have thought that I perceived an obscure blowing sound in the tract of the superior longitudinal sinus when tumor was rapidly reduced by the patient, but my confrères could not verify it. No pain, and were it not for the deformity with the vertigo whilst bending forward, he would not be inconvenienced by its presence.

As to its origin he reported that, at the age of 15 years old, he was kicked by a horse in the frontal region. Did not lose consciousness, and even continued to follow his occupation—it being several days thereafter before he discovered this tumor, which has always presented its present appearance. He had consulted another physician some time previously, who made an exploratory puncture, which was followed by a jet of blood. This was easily arrested. Nov. 20, M. Hirigoyen punctured it with a lancet.

[8] Reported in previous paper.

[9] Reported in my first article.

Blood spirted out, having all the characters of venous blood. A probe introduced now discovered a depression in the bone and some roughnesses, although the bone is not denuded, but covered by a thick, soft membrane. No orifice of communication with interior of skull is discoverable, but such must exist, and is probably with the superior longitudinal sinus. Hæmorrhage easily controlled, and skin wound healed rapidly. Pressure over tumor was employed for twenty days without result, and the patient left the hospital in an unchanged condition. Saw him twice afterwards, the last time in 1857, and tumor in same condition. The avoidance of any operation, and the use of local pressure, was advised.

The next is the second case[10] of M. Azam (Dupont, loc. cit.):

Jeanne T., of the *Bourg-sur-Gironde*, age 60 years, consulted the 'Charity Committee' of the Medical Society of Bordeaux in March, 1854, about a tumor situated in the frontal region. She stated that about eighteen months previously, whilst at work in the field, she stepped upon a rake, which flying up, the end of the handle struck her with considerable force on the forehead. The pain was intense, but she did not lose consciousness. The apparent contusion was relieved by ordinary measures without medical attention. Twenty to twenty-five days afterwards she recognized the existence of a tumor at point of contusion. This was soft, size of a small nut, and hardened and increased in volume when she lowered her head. No headache. Did not consult a physician until after three months had elapsed, at which time the skin covering the tumor becoming thinner and of a violet color, she consulted M. Gaignerat, of Bourg, who punctured it, and, according to her statement, it bled most profusely, but a bit of English taffeta sufficed to staunch it. She presented herself now before the Medical Society. At this time the tumor, situated on the median frontal line, near hair margin, was about the size of the half of an ordinary nut; soft and fluctuating; slightly violaceous in color; without pulsation or bruit, and conveying the sensation of a skin pouch containing a spongy substance. It becomes tense when the head is bowed down or lowered, and a continuance of this position causes dizziness. It softens and slowly diminishes under pressure by the hand or fingers. It is very evident that the fluid passes into the skull. After reduction of tumor there remains under the skin a soft tissue which prevents any close examination of the underlying bone. Punctured it with a small trocar; only a small quantity of venous blood escaped. Manipulating the canula in different directions showed that the tumor was not formed of a single pouch, but of a spongy tissue composed of large cells. This explains the slowness with which the fluid trickled out, and which, also, evidently passed through a narrow passage in the bone into the skull cavity. I could not discern the opening, nor did I recognize any rugosities or denudation of the bone.

The annexed case[11] of M. Hutin, which occurred at the Hôpital des Invalides, is reported by Dr. Gustave Dufour (*Compt. rend. et Mém. de la Soc. de Biol.*, t. 111, p. 155, 1851):

Achille Maximilien, Marquis de W., Comte d'I., born 1770, at Paris; entered infantry service in 1792. In 1799, in charging a redoubt in the Piedmont, he received a blow from the butt-end of a musket on right side of forehead about 3 cm. from median line. He remained unconscious for twenty-four hours. When he regained his senses he was told by the surgeon in attendance that there was a fracture of the skull, and the lesion was very grave. There was no wound of the integument, but a deep depression under the skin was quite perceptible to the touch. During the next year he was an inmate of different hospitals, and received divers forms of treatment, especially local pressure. The ultimate result of the wound was an infirmity which incapacitated him from following the profession of arms. When he leaned forward with head inclined towards the ground, he would feel a swelling form on the site of the wound, having the volume of a nut, of a violet color, and which would disappear spontaneously when he again assumed the upright position. In 1814 he gained admittance to the Hôpital des Invalides, and in 1847 M. Hutin, then becoming surgeon-in-chief, was peculiarly interested in his case, and added himself the following notes to the history of the case: 'Cicatrix not apparent; osseous depression very marked. The conditon is, doubtless, the result of absorption of the diploë and the approximation of the two tables of the frontal bone. The pouch is small, formed at the expense of the skin, and is not apparent when the soldier is standing, sitting, or reclining on his back; but when he bends forward with the head lowered, the pouch makes its appearance and attains the volume of half an egg. It is livid in color; is formed, evidently, as are cysts in contused parts, and is dependent on a communication with the superior longitudinal or some other sinus.'

I learned that this old man, notwithwithstanding his age of 81 years, was in perfect mental and physical health. October 28, 1851. Seized with erysipelas of neck and thorax, complicated with chronic bronchitis, and died November 3.

Necropsy—Head.—No visible traces of erysipelatous action. Normal in size and contour. On forehead, 2 cm. below hair margin, and to right of median line, is a cutaneous space about 2 cm. in diameter, which is rendered distinct from surrounding skin by its rosy color, and this corresponds to a clearly outlined osseous depression beneath. Lowering the head now fails to produce the phenomenon which was so easily brought about during life. *Brain.*—Sound and without traces of old or recent apoplectic clots; white and gray substance distinct; vascular network of pia mater moderately injected, but without infiltration, and is easily separated and detached from the cerebral convolutions—even directly under the wound. The visceral layer of the arachnoid, however, on the right side, 3 cm. from the middle line, is glued down to its parietal layer and also adherent to the dura mater, and any traction exerted upon these adhesions causes a few drops of

[10] Reported in my first paper
[11] Reported in my previous paper.

blood to ooze out into its (arachnoid) cavity. The dura mater is also easily separated from the entire surface of the bone except at this locality of 3 cm. from the median line, where it is adherent to the osseous wall. Opposite to this attachment the bone is perforated by several small openings. Injection of water and insufflation of air into the superior longitudinal sinus demonstrates the existence of a pathological communication of the sinus with the blood pouch above. The calibre of the sinus is somewhat increased, and filled by a long, reddish, fibrinous clot. Skin over tumor thinned, and sends out from its inner fibro-muscular surface attenuated fibrinous prolongations which attach themselves circularly to the periosteum on the circumference of the bone depression, and which depression is lined by a bit of cellular periosteum, and is 5 cm. in breadth by 2½ cm. in height. The circumference of the depression is formed by a notable thickness of compact bone tissue, but its centre is very thin and spongy. The floor of the depression is also divided, by a jutting out of compact structure, into two smaller depressions: the left one extends a little beyond the middle line of forehead, is rugose, and is sprinkled with little dark openings; the other on right side is more extensive, and is riddled with minute apertures—entirely deprived of its vascular element (diploë) and corresponds to the thinnest of the cutaneous cavity, at which point both skin and bone are semi-translucent. The frontal suture plainly seen above and below the osseous lesion, but especially apparent on the altered surface. Finally, the tegumentary coverings are thinned, being deprived of all muscular and adipose tissue, and composed only of skin re-enforced by a delicate lining of fibrous tissue.

Hutin reports another case[12] (*Mém. de Médicine Mil.*, t. xiv, p. 232, 2e Série, 1854):

K., born in 1771; entered military service in 1790; received at the battle of Jèna, Oct. 14, 1806, two sabre wounds on the head—the first on superior and middle of forehead, the second on top of the head. Did not lose consciousness; fragments of bone extracted; recovery after about nine or ten months without any grave symptoms.

Forty years passed without his being troubled by any serious sickness; only suffered from severe headache. In March, 1846, while intoxicated, he fell into a bed of rocks, fracturing thigh and ribs. A pleuro-pneumonia was not tardy in developing; and in ten days thereafter he was also attacked with erysipelas, which was epidemic in the wards. Delirium; parotid abscess. March 24. Carries hand frequently towards summit of head to the right of the most prominent scar. Pressure here discloses circumscribed fluctuation and pain which did not exist previously. Diagnosing an abscess, a small incision was made into it, but only blood escaped. There was a blood-pouch containing a black, semi-coagulable liquid, poured out between the osseous vault and the pericranium, thus detaching the latter. Attempts to detect a fissure failed. The day following the dressings were soaked with blood; attempts to find fissure still futile; extended incision, which brought to view a slow, continuous oozing of venous blood from the depths of the bony wall and to inner side of the wound. This was without pulsation and uninfluenced by the respiration. A delicate blunt probe pressed upon this point readily passed on into the skull through a small opening which was covered over to about three-quarters of its extent by the soft tissues. Dry charpie and bandage arrested hæmorrhage.

Autopsy.—Scalp puffed up and much injected from erysipelatous inflammation. Cicatrix on frontal bone adherent to the remains of the frontal suture, with marked depression of the integument. At 2 cm. beyond the fronto-parietal suture and within 1½ cm. of the saggital, commence the other adhesions belonging to anterior region of the *second* cicatrix, and which are equally resisting but of limited extent. Below these is the pouch which was incised during life. This pouch (subpericranial) is about 4 cm. in extent from before backwards and 2 cm. from right to left. On removal of skull-cap all was found normal except a trivial injection of the arachnoid, one or two points in the brain, and a small quantity of serum in the ventricles. Dura easily detached over almost entire vault, except at a point corresponding to the wound of the vertex, and on each side of the closed saggital suture, where it adhered closely to the parietes, but without any visible scar. At a point corresponding to the external angle of the wound the dura mater intimately united with external tissues through a fissure in right parietal bone. The unclosed opening of the bone was about 2 mm. in width by 1 cm. long. Longitudinal sinus contained a small quantity of coagulated blood, which was partially dislodged by a stream of water—after which was visible a very pronounced projection in the sinus, passing in a line from behind forward and from right to left, and corresponding exactly to the external cicatrix. This projection was caused by a depressed thick bone-splinter depending from the internal table, and was the result, evidently, of the sabre blow—being partially detached and thus remaining fixed for many years. This spicula terminated in a spine which had perforated the sinus, and passing through into the lumen maintained patulous an opening in its walls about 4 mm. in size. Through this opening a small quantity of blood had escaped from the sinus, and which, poured out between the bone and dura, formed in this locality an oblong pouch of 3 × 2 cm. in diameter; but on the outside of the skull it had diffused itself between the bone and the periosteum, forming the collection which had been mistaken and opened for an abscess. This external effusion had passed through an opening existing in left parietal, 1½ cm. in front of and to the right of the sharp end of the fragment, and resulting from the non-occlusion of the bone divided by the sabre blow. Hence there was a direct communication between the superior longitudinal sinus and the wound in the integument, for in this fracture there were no adhesions between the meninges and the pericranium as existed through the anterior fracture. The perforation in the superior longitudinal sinus is a little to right of median line.

Stromeyer refers to two examples. The first (Ueber

[12] Reported in my previous paper.

Sinus Pericranii, *Deutsche Klinik*, Bd. 11, S. 160, April 13, 1850) is transcribed below:

A boy, 6 years of age. He sustained a fall on his head from a considerable height in his second year, resulting in a depression of the right parietal bone, which extended along the greater part of the saggital suture. The point of greatest depression was 2½ lines. The entire depressed portion was covered by a blood-pouch of 2½ inches square, which when filled was raised about 3 lines. On complete emptying the bone was felt, and the outer table was evidently poorly formed. Turgescence of the tumor is favored by each circumstance which is likely to produce congestion of the head, namely: crying, coughing, dependent position of the head, compression of jugular veins, etc. When child was quiet no fluid was discernible in the pouch.

The second case, of more recent date (*Maximen der Kriegsheilkunst*, note, S. 362, 1861), is thus briefly mentioned:

A cavalryman in 1859 was dismissed from the army on account of a blood-cyst located on the frontal bone. When distended with blood it was the size of a pigeon-egg.

The cause of the growth is not stated in this instance, but on account of the profession of the patient, together with the connection in which it is referred to, I have been led to consider it as an example of the form due to direct injury, and thus class it as such.

There are, in addition, cases belonging to the traumatic division, mentioned by Schellmann ("Ueber Verletzungen der Hirnsinus," *Geissen, Inaug. Dissert.*), and quoted by Bergmann (*Deutsche Chirurgie*, Lief. 30, S. 365, 1880).

ETIOLOGY.

The two principal varieties of this lesion recognized by M. Dupont were these: First, when the tumor communicated with the sinus of the dura mater through normal skull-openings or canals, as varicose venæ emissaria passing through their respective foramina; and second, in which this communication with the intra-cranial venous circulation was effected by means of abnormal passages. This latter class might be due to fracture of the cranium and wound of the sinus; perhaps to a non-traumatic or spontaneous perforation of these structures; and, finally, to an ulceration of the osseous tissue and a vein in the situation where such a vein pierces the skull in its course to the sinus.

M. Dufour suggests another condition, that is, in which the extra-cranial growth communicates with the sinus, either directly or indirectly through the medium of the diploic circulation. He considers this variety to be especially anticipated in persons of advanced years, in whom the diploic veins are greatly developed and frequently dilated into venous expansions or lacunæ.

The etiological classification adopted by Herman Demme is as follows: (1) Rupture of the external cranial veins, without scalp wound, resulting in cysts which may communicate in various ways with the sinus. Thus, a vein emptying into the sinus may become torn, and, forming an epicranial or aponeurotic blood-collection, after the manner of traumatic aneurism, communicate with the sinus by this means; especially in the case of the large parietal veins which penetrate the bone through their foramina located on either side of the posterior portion of the saggital suture. It may occasionally happen, also, that, under the pressure of the extravasated blood, bone resorption takes place, leading to opening of the veins of the diploë and through these to a communication with the deeper venous blood conduit of the dura. Again, the injury producing such an external blood collection may itself excite absorption and perforation in the position of a Pacchionian fossa or depression, and by this method intercommunication between the sac and the sinus system be established. (2) Varices of the external cranial (emissary) veins forming cysts which unite directly, through their relative openings, with the corresponding sinus. (3) Extra-cranial venous cysts resulting from enlargement and dilatation of the sinus itself. These are produced either by gradual absorption and breaking through of the cranial parietes, or they are pushed forward and protrude through a normal or preëxisting opening, like, for example, a fontanelle.

In closing a brief but interesting article on this character of formations, MM. Follin and Duplay declare that with the information before them they can admit only two varieties, namely: First, tumors produced by traumatic ruptures of the sinus; second, tumors resulting from atrophy and perforation of the bone in the region of the sinus or of the Pacchionian cavities. They add, however, that it may be possible, although an exception of extreme rarity, for tumors of this nature to be produced by a varicose dilatation of an emissary vein of the sinus. But, they continue, "we may be permitted to express some doubts as to the existence of this variety."

Bruns describes two forms of varices of the extra-cranial veins communicating with the dural circulation, under the description of (1) varix verus circumscriptus, and (2) varix verus cirsoideus.

Stromeyer believes that these lesions are usually produced by a rupture of an emissary vein, resulting in blood extravasation and formation of a limiting sac beneath the pericranium.

The theory of osseous atrophy—rarefying osteitis—first formulated and advocated, I believe, by Simon Duplay, is supported by Legouest and Servier, Azam, Follin and Duplay, and many others. The initial step in this process is claimed to be found in, (1) a trivial or even unnoticed traumatism, in the form of a contusion; (2) in the erosive action of the Pacchionian granulations alone; or (3) in both the first and second combined—the one being dependent upon the other. The final rupture of the rarefied osseous point may be accomplished either spontaneously, or caused by some slight shock or blow.

These general etiological outlines, as applied to the several groups separately, call for a more complete elaboration.

A. *Congenital Group.*—The points and theories to be examined relative to the etiology of the congenital cases, mentioned in the order of their seeming

prominence, are as follows: (a) Aneurismal or varicose dilatation of one or more emissaria Santorini; (b) Localized morbid processes in the structure of the sinus wall—a phlebectasia or true varix of the sinus; (c) Pathological enlargement and dilatation of the venæ diploicæ; (d) Certain hereditary vices, such as syphilis and struma; (e) Developmental arrests, as want of closure of a fontanelle, abnormal fontanelles, etc.

a. Notwithstanding the questionable opinion expressed by some authors as to the rôle played by varicose venæ emissaria in the production of this form of sanguineous tumor, the preponderance of general evidence, clinical and anatomical, is most decidedly in favor of such a morbid association, and therefore I must claim conspicuous recognition for it in this position. In clinical proof of this union the cases of Moreau, Mersemann, Acland, Michaud, Stromeyer and Verneuil bear ample testimony; and hence not only dispel any serious doubt as to the etiological office of such varicosities, but even accord to this factor a high rank in the causal list of the present collection of congenital cases. In four of the cases intelligent and carefully conducted post-mortem sections, with surgical examination in the fifth, demonstrated the real character of the lesion.

b. Diseased processes in the sinus-wall, producing hernial protrusion, or true ectasia, of the sinus itself, is upheld by the recorded examples of Demme and Foucteau, and probably that of Flint, in two of which a necropsy disclosed the extent and nature of the tissues involved. In Demme's patient the microscope was employed in verifying the post-mortem appearances, and in the other (Foucteau's) one or more of the coats of the sinus was clearly recognized by the unaided vision as entering into the composition of the sac.

Francke (Lehrbuch der Chirurgie, Bd. 11, S. 49), expresses the belief that such blood-pouches formed at the expense of the sinus wall, can occur only in monstrosities and non-viable children; but the above instances, especially that of Demme, are fair evidence of the incorrectness of his views and statement.

Furthermore, Velpeau (*Gaz. des Hôpitaux*, t. viii, 2e Série, p. 87, 1846) mentions having seen in two instances (presumably congenital), extra-cranial blood-tumors caused by a phlebectasia or hernia of the dural sinus; once near the anterior fontanelle, and a second time in the region of the occipital bosse.

c. Disease and enlargement of the diploic vessels is represented by the patient of Francke (and several others), in whom there was a blood tumor identical, apparently, with a frontal diploic vein, and associated with congenital resorption or absence of a portion of the outer table.

d. Hereditary syphilis or the rickety diathesis occasionally finds expression in the production of craniotabes, where areas or spots of softened and thinned osseous structure take place in the cranial walls, only requiring some slight internal or external pressure to convert them into veritable skull perforations. Although this condition is but seldom observed congenitally, occurring principally in syphilitic infants during the first year subsequent to birth, yet it is worthy of note that this sometimes does happen; that the inner cranial aspect is usually the primary seat of attack; and that they are generally observed occupying the posterior parts of the parietal bones—about the position where one form of this venous tumor is most frequent; and, too, in which neighborhood the Pacchionian bodies most abound.

Parallel with this observation the so-called gelatiniform degeneration of the outer table of the skull (Parrot) must be referred to, as offering points for consideration in this study.

e. The influence of certain developmental arrests suggests a field for inquiry.

These may be shown in want of closure of the normal fontanelles, thus facilitating hernial protrusion of the dural sinuses; and in abnormal fontanelles, as absence of ossification in the ossa Wormiana. Against the latter, however, in those instances where the growth is situated centrally and anteriorly on the head, may be urged their extreme infrequence in the median part of the cranial vault.

Another condition having a possible, if not probable, relationship to the etiology of the congenital class, is to be found in traumatism from head pressure during parturition.

A wound or rupture of the sinus may occur at birth, as stated by Bergmann (Deutsche Chirurgie, Lief., 30, 1880), when the overlapping of the cranial plates, in the line of their sutures, exceeds a certain limit—an occurrence that, in spite of the great changes in shape and size to which the fœtal skull is subjected in a narrow pelvis, must be considered rare. He mentions also that Litzmann (Ueber den Einfluss des engen Becken's auf die Geburt im Allgemeinen, in *Volkmann's Sammlung Klin. Vorträge*, Nr. 23, S. 191, 1871), saw the *sinus longitudinalis* twice torn during labor in cases of generally contracted and flattened pelves, where the pressure from the promontory upon the already compressed head was so great as to force the sharp serrated edge of the saggital suture through its tense coverings. Both children died shortly after birth.

Similar cases are reported by Michaelis ("Das enge Becken, noch eignen Beobachtungen herausgegeben von Litzmann, Kiel, 1865), Weber (*Beiträge z. pathol. Anat. der Neugebornen*, Lief. 1, Kiel, 1851), Olshausen (*Deutsche Klinik*, S. 365, 1864) and C. Hennig (Die Kopfblutgeschwulst, in Gerhardt's "Handbuch der Kinderkrankheiten," Bd. 11, S. 54). Again, the same injury of the *transverse sinuses* was met with by Weber (loc. cit.) and Breisky (*Prager Vierteljahrsschrift*, Bd. 63, S. 178).

Under such circumstances where there is a limited wound of the sinus, particulary if the external tissues or scalp escape implication, it is easy to appreciate how this character of tumor can be thus originated.

Finally, it should be noted that in all the clinical cases belonging to the congenital group which were positively determined by post-mortem dissection (varicose venæ emissaria, ectasia of the sinus, and dilatation of the diploic veins), the lesion had its origin, apparently, in a morbid action of the vein-wall itself, namely: a venous hypertrophy and phlebectasis.

B. *Spontaneous Group.*—The several explanations

proposed as to the origin of the spontaneous group may be summed up in the subjoined arrangement: (a) Absorptive or erosive action of the Pacchionian glands; (b) An obscure form of osseous resorption, or rarefying osteitis; (c) Varicosities of the venæ emissaria; (d) Localized morbid processes in the sinus wall, producing bone absorption, and consequent hernial protrusion of the sinus; and (e) Certain constitutional or systemic vices.

a, *b* and *c*. As previously referred to, two forms of osseous implication were recognized, that is, bone resorption dependent upon two separate and distinct causes, namely: an osseous atrophy resulting from the absorptive or erosive action of the glandulæ Pacchioni, and a rarefying osteitis due to some remote contusion. Careful investigation, however, has determined me to include the two forms under the single title of *rarefying osteitis*, since it is very probable that the osteitic changes ascribed to the action of the Pacchinonian granulations are very similar to, if not identical with, those resulting from bone contusion, especially as the history of a blow or fall is often associated with the special individual action claimed for these glandular bodies.

Furthermore, the bone resorption resulting from localized diseased processes in the structure of the sinus itself, followed by a true sinus varix or ectasia, is, doubtless, closely allied to the above forms of osteitis, and, hence, this should be comprehended, also, under the single form mentioned. Therefore in the following remarks I shall speak of one variety of osteitis only as produced by the three above named factors. The hypothesis of a rarefying osteitis with spontaneous perforation in the so-called spontaneous cases was suggested by M. Simon Duplay (vide Duplay, also Follin et Duplay), who formulated his theory upon the researches of Trolard upon the venous system of the skull and brain. This author (Recherches sur l'Anatomie du Système Veineux du Crâne et de l'Encéphale, *Archives Gén. de Méd.*, t. 1, Mars, 1870) described as situated on the lateral parts of the superior longitudinal sinus, certain areolar venous spaces or *locs sanguin*[13] corresponding to the forea glandulares, limited on one side by the osseous surface, and which, bathed by the venous blood, communicate freely with the superior longitudinal sinus and the venous canals of the diploë.

A brief résumé of the theory advocated by Duplay is as follows: The osseous lesion is the first degree or stage of the morbid formation. The bone is subjected to a blow or fall—a contusion—which produces a partial localized atrophy of the skull. This atrophy of the cranial bone is not extremely rare, occurring at all ages, and often taking place in limited areas or spots, particularly on the lateral parts of the superior longitudinal sinus over the fossæ lodging the Pacchionian glands, and in which, also, are these spaces or *locs sanguins* communicating freely with the sinus, and upon which anatomical disposition the theory is based. Thus, taking one of these points, atrophy is developed consequent upon a trivial blow and progresses steadily, reducing the bone to an exceedingly thin lamina, until spontaneous perforation is produced, or perhaps more frequently, a slight secondary contusion or shock may supply the rupturing force, and an opening into one of these venous spaces or lacunæ is effected. By this means intercommunication with the sinus is established, venous blood escapes and is effused beneath the periosteum, the tissues are floated up, and this type of blood-tumors of the cranial vault is the result. "It is thus, probably, that one would be able to explain the relation ascertained to exist in nearly all cases between the development of the tumor and the previous action of a blow or fall."

This theory of a rarefying osteitis in spontaneous cases is accepted in full by Legouest and Servier; and these authors even apply it to a more extended field than that claimed by Duplay, since they assume that the same theory is applicable to the pathogeny of analogous tumors developed in other portions of the cranium—first when occurring over the mastoid cells or the frontal sinus, a pneumocele resulting; or, second, even the diploic structure may become involved. In explanation of the latter involvement they refer to the existence in the diploë of ramifying cavities, lined with the internal venous coat (intima), communicating as freely with the dural sinus as with the extra-cranial circulation. These diploic canals constitute, especially in old persons, a continuous system which unites abruptly with four or five principal confluents passing to the cavernous sinus, the ophthalmic vein, the middle meningeal vein either directly or through the intermediary of the posterior condyloid vein. It results, therefore, that the wear of the cranial table opposite to these confluents may give rise to the development of a sanguineous tumor in communication with the intra-cranial venous circulation without the longitudinal sinus being perforated.

M. Azam believes that traumatism is always the point of departure of a rarefying osteitis; and Dufour also considers the abnormal communication to be caused by an obscure form of osteitis, followed by interstitial resorption of bone, the probable consequence of a trivial contusion.

Many authors rather question the possible rôle ascribed to the Pacchionian granulations of producing atrophy and skull perforation, among whom may be mentioned Meyer, of Hamburg (*Virchow's Archives*, Bd. xix, p. 171), whose rich experience in this field of inquiry entitles his opinion to consideration. Notwithstanding very elaborate investigation and examination of these bodies he has failed to encounter a single instance in which the forea glandulores of the calvarium extended to actual perforation.

But, on the other hand, some writers advocate this theory, giving it decided preference over any other, as shown by the opinion of Dr. Gross (System of Surgery), who asserts that "the most common cause of the abnormal communication is spontaneous, progressive absorption of the osseous tissue corresponding with the Pacchionian depressions, when, under the influence of slight traumatism, the blood escapes beneath the pericranium."

Again, as a direct example of this character of

[13] These structures were described, prior to the publication of Trolard, by Cruveilhier, Luschka, Henle and Meyer They are designated as *lacunæ lateralis sinus* by Key and Retzius, and have received also from Browning the euphonious term of *Parasinoidal* spaces.

perforation accompanied by a rupturing force or shock, the following case mentioned by Demme will be found of special interest and importance:

A robust man falling from a high building scaffold received numerous severe injuries which proved fatal in ten hours. At the autopsy there was discovered a large blood effusion extending over the posterior part the saggital suture, and which was found to be, for the most part, beneath the periosteum. After carefully washing the clot there was shown to exist, on the left side of the saggital suture, a sharp-edged opening the size of a cherry stone, through which protruded a Pacchionian granulation covered over by coagulated blood. On removal of the skull-cap a second coagulum was observed interwoven with the meshwork of the large Siekel sinus, and which (the sinus) communicated directly with the extra-cranial hæmatoma through this resorptive opening of the Pacchionian gland. My examination left no doubt in the matter that the intra-cranial hæmorrhage arose from a rupture of one of the numerous venous vessels tearing through the fibrous walls of the sinus.

In further support of these views I may refer to those obscure alterations and perforations occasionally met with in the petrous portion of the temporal bone, sometimes opening the tympanic cavity, which, according to Luschka, like the forea glandulores of the calvarium, are not improbably the result of pressure exerted by these villous-like vegetations.

Typical examples of this pathological process (rarefying osteitis) are furnished by the cases of Bruns, Hecker, Dubois, Giraldès, and Duplay, for, although not positively demonstrated to exist by post-mortem sections, they have the history of a contusion followed after a delayed period by the appearance of the tumor, together with the subjective symptoms to be anticipated under such circumstances.

The cases of Bruns, Dubois, and Duplay were regarded as being connected with the sinus either immediately or through the medium of the diploic canals. But all the symptoms seem to indicate to my mind, that Bruns's case was associated with the veins of the diploë, whilst those of Dubois, Giraldès and Duplay were, doubtless, in direct communication with the sinus.

On the other hand, the patient described by Hecker was suffering clearly from a blood-pouch first communicating with the diploë and then leading to the sinus—the result of extensive cranial loss. Hecker explains the origin and formation of this case (*varix spurius circumscriptus venæ diploicæ frontalis*) about in this wise: In consequence of a fall on the head in infancy a separation of the outer cranial table was produced with tearing of the diploic vessels, which is easily explained from the thinness of the external table and the great vascularity of the infantile skull. The blood escaped now from the diploic veins into the adjacent cellular tissue under the skin, and as the repair of the vein-rupture (perhaps on account of anatomical conditions) was not effected, the hæmorrhagic effusion continued until the cellular tissue became infiltrated and, as it were, consolidated. Now, however, this consolidation forming a barrier against further bleeding, a pouch with well-defined walls was finally formed, which, gradually but more or less completely filled with blood, emptied its contents, by means of the supra-orbital foramen, into the external cranial veins, especially the vena supraorbitalis. Osseous absorption rapidly supervened, and the tumor reached its present limits.

Hernia or ectasia of the sinus is shown in only one instance, namely, the specimen of the Jacobi. There is considerable doubt expressed, however, by several authors, whether it was of congenital or spontaneous formation, but both Bruns and Demme are decided in their opinion as to its being spontaneous. Here, also, as before suggested, it is more than probable that osseous atrophy was the active element in causing the skull opening.

c. Varicosities of the renal emissaria is exemplified in the cases of Melchiori and Andrews, in both of which necropsies disclosed the morbid changes.

Dr. Andrews gives this solution of his case: A small vein penetrated the skull (occipital emissary vein) communicating with the torcular Herophili and the scalp, and the protracted determination of blood to the brain produced enlargement and distension of the torcular,—this emissary vein also receiving a proportional increase in its calibre. Like the continued drop wearing a stone, so the oft-repeated *vis a tergo* expansion wore the bone, producing the pulsating tumor (in thus dilating the vein) and the large foramen in the skull.

In regard to spontaneously arising single or *circumscribed* dilatations of the external cranial veins, Bruns (Op. cit., p. 191) expresses the opinion that they are extraordinarily infrequent. This assertion is based upon his personal experience of two cases, with one other which he had found recorded.

e. Constitutional and systemic vices—more especially syphilis and struma—deserve notice as occupying a possible causal position. Such is manifested in those osseous changes already referred to in the congenital group; but in this category there should be included, also, any systemic condition predisposing to bone alteration or degeneration. Furthermore, it is quite possible that, in cases of rarefying osteitis, there is often some constitutional condition—a predisposition—which renders the osseous tissue peculiarly susceptible to the taking on or lighting up of this atrophic process upon the reception of a contusing force. Suggestive of this is the case of MM. Nèlaton and Richard, in which the growth was not discovered until after a severe illness of the patient.

C. Traumatic Group.—Direct traumatism is the essential element to be recognized in the etiology of this class, and the necessary conclusion deduced therefrom is that, in all traumatic cases fracture is, practically, invariably present, wounding the sinus-wall by, (i) either depressed fragments or detached spiculæ, as in any comminuted fracture; (ii) by punctured fractures, the instrument used in such fractures also penetrating the underlying sinus; (iii) by the separated sharp edges of the fractured bone, especially if the line of fracture passes across the suture to which the sinus is attached; (iv) the sinus may be torn through by a disjunction or separation of the sutures over the sinus, particularly the sagittal suture.

There is, however, another method by which this lesion may be possibly caused where fracture is not a necessary accompaniment, namely, rupture or tearing of the sinus without fracture or suture-separation, produced by certain decided changes in the form of the cranium resulting from heavy blows inflicted by some broad, flat instrument (Bergmann). I have no record of an example so produced, but the injury demands notice as standing in the category of possible factors.

From this character of injury experience shows that the transverse sinuses tear more frequently than the longitudinal, which is explicable not only on the ground of their anatomical location and connections, rendering them much more fixed and unyielding than the latter, but also in the fact that the cause resides, perhaps, in the direction of the rupturing forces, which commonly operate from above and behind. Thereby the cranium is compressed from above downwards, but expanded laterally,—an expansion which must cause great stretching of the transverse sinuses, and, as seen, a giving way, occasionally, of their walls.

On the other hand, rupture of the torcular Herophili is, of all the sinuses situated directly beneath the cranial walls, the most rarely met with. It should be noted, also, that in the analysis of the seven traumatic cases, six are characterized by the absence of external or integumentary wound, and in only one is the fracture open or compound. Hence this preponderance of subcutaneous or simple over compound fractures in association with this injury, must be mentioned as a point of special interest. It is necessary to remark, however, that investigation has shown that laceration of the sinus from cranial fracture with depressed bone-splinters, without simultaneous scalp wound, is comparatively rare. Nevertheless, in one of Stromeyer's cases it is important to refer to the fact that it was a child who had his right parietal bone depressed, from a blow the result of a fall, without cutaneous wound, furnishing another instance of injury of the sinus from a simple fracture.

(*To be concluded.*)

THE THERAPEUTIC ACTION OF THE OIL OF TURPENTINE IN THE MORE PAINFUL AFFECTIONS OF THE DIGESTIVE ORGANS OF INFANTS AND YOUNG CHILDREN.

BY BEDFORD BROWN, M.D.,

OF ALEXANDRIA, VA.,

MEMBER OF THE BOARD OF MEDICAL EXAMINERS OF THE STATE OF VIRGINIA.

In the therapeutic management of the more painful and grave affections of the alimentary canal of infants, and in those of a harmless character attended with suffering, I have for some years past been testing the virtues of the oil of turpentine as a curative agent. The use of the turpentine in this class of affections has given me much satisfaction.

The diseases of the digestive organs of infants, we are all aware, are among the most intractable and fatal which come under our observation and treatment.

If by any agency these painful and destructive diseases, which cause so much suffering to these helpless little creatures, and anxiety to relations, can be relieved or mitigated, I believe the profession is entitled to a knowledge of it. While I appreciate the fact that the therapeutic properties and application of this well-known remedy to the treatment of certain adult affections are clearly comprehended by the profession, I am equally aware that its value as a remedial agent in a large class of diseases of the mucous surface of the alimentary canal of early life, is probably not understood. Who in our profession does not witness annual visitations, during every hot season, of those inflammatory affections, often epidemically, a large proportion of which prove fatal regardless of the use of opiates, astringents, alkalies, mercury, and bismuth? In my own experience the oil of turpentine often fills a place here which no other remedy does. The therapeutic action of the turpentine on the diseased mucous membrane of the intestinal canal is of a multiform character. It is eminently soothing to the irritated and inflamed membrane, and seems to promptly arrest that rapid exfoliation of epithelium which, during the inflammatory process, is progressing at an unusual rate of rapidity. If it be really true that this agent is capable of correcting this sloughing process in intestinal inflammation, it is an important point gained in the therapeusis of this class of diseases. I think that experience will fully sustain the opinion that the agent is really reparative in its action.

The action of turpentine on the tongue is doubtless largely typical of that on the mucous surface of the digestive organs. On the *dry*, *cracked*, *red*, *contracted* and imperfectly nourished tongue of fevers the direct effect of the agent is to increase and regulate the circulation of the organ, to reëstablish the secretions and restore nervous function, so that in place of the former condition the organ becomes moist and pliable, assuming its natural complexion and softness. We have reason to believe that in that numerous class of diseases of the digestive tube of an inflammatory character, accompanied with fever, the the condition of the tongue actually in part represents the state of the mucous membrane of the gastro-intestinal canal, and the action of the turpentine on the one indicates to a certain extent its remedial influence on the other. The oil of turpentine in common with the other essential properties and products of wood tar, is manifestly antifermentative, antiputrefactive, deodorant, and antiseptic. In this respect, apart from its peculiar powers in healing inflammation of mucous membrane, it becomes an important agent in correcting fermentative and putrefactive action in the contents of the intestinal canal, which plays so conspicuous a part in the causation of disease in infantile life. The action of turpentine on the circulation, and indeed on the process of blood formation, is positively of a restorative character. This peculiar therapeutic property is clearly demonstrated through the remarkable influence of the remedy in restoring the circulation in purpura

simplex and purpura hæmorrhagia, and in correcting the tendency to those affections. In both of these diseases there are certainly blood stasis and blood depreciation. This fact, which has been repeatedly demonstrated in the practice of myself and others, indicates the decided influence of the agent over certain abnormal irregularities of the capillary circulation, and at once directs our attention to its adaptability in relieving engorgements and healing inflammations of the mucous membranes. Its remarkable influence also in arresting hæmorrhage of the stomach and intestines constitutes another evidence of decided action in regulating the circulation of those membranes. Whether this hæmostatic power is due to some astringency or to some peculiar influence on the vital conditions of the blood, as in the case of purpura, is difficult to decide.

The action of the drug in these diseases of the mucous membranes is not confined to its influence over the capillary circulation, but extends to the organic system of nerves and the secretions. In other words, it exerts a positive influence on the vital operations of the epithelial cell itself. When the digestive juices of the salivary gland, the stomach, pancreas and intestines are imperfectly secreted, as they too often are, all food, instead of being digested, being exposed to a temperature of 100°, is at once subjected to the laws of chemistry and, undergoing rapid fermentation and putrefaction, gives rise to various deleterious products of an acrid and gaseous nature, which produce an endless train of morbid actions in the alimentary canal of the infant.

I am fully impressed with the belief that the oil of turpentine acts as a stimulant to the salivary, stomachic, pancreatic and intestinal secretions, and in this way becomes a promoter of the digestive operations. In that condition of the system indicated by a dry, red, glazed, or brown tongue, we may rest assured that the processes of digestion and assimilation are wellnigh suspended for the want of the appropriate secretions. If the turpentine can restore the secretions of the mouth and restore the tongue to its normal state, the digestive process has already received an important impetus. There is probably no stage of human existence more subject to those painful, protracted and deleterious sequences of indigestion from defective secretions of the digestive fluids, than that of infancy.

The dry, inflamed, and aphthous mouth of the infant suffering from chronic mucous disease, when all healthy secretion is in great part suspended, calls imperatively for the use of some agent which has the power to restore these absolutely necessary factors of digestion. The almost invariable improvement which follows the use of the turpentine in the digestion of infants suffering from intestinal and gastric affections, leads to the rational conclusion that it exerts a general influence in promoting the flow of the various juices concerned in the act of digestion. Under the use of this agent the process of digestion is certainly facilitated, becoming more easy, comfortable, and more free of pain, while the abnormal products arising from indigestion are decidedly diminished, if not entirely prevented.

Mention has been made of the antifermentative and antiputre active, as well as the antiseptic properties of turpentine. The presence of these properties is clearly indicated in its decided agency in preventing and arresting the evolution of offensive intestinal gases and tympanites. Probably in our study and treatment of the intestinal diseases of infants we have not heretofore attached sufficient importance to those septic influences arising from the acts of fermentation and putrefaction in the contents of the canal. In such cases we are too prone to trust alone to the agency of opiates, alkalies, and astringents. Fermentative action and its peculiar products in the contents of the digestive organs of the ill-fed, ill-nourished infant suffering from dyspepsia is the bane of infantile existence. These products consist of the various acrid and irritating animal and vegetable acids as the lactic, butyric, and acetic.

The gases evolved from fermentation and putrefaction are the carbonic acid, carburetted and sulphuretted hydrogen, and the ammoniacal. The hourly contact of these deleterious and poisonous agents with the imperfectly developed epithelial coats of the infantile digestive organs must prove destructive of its organization and cause erosion, with its extensive morbid consequences.

Following these general remarks on the use of the oil of turpentine in the intestinal affections of infancy, it is proper to state in detail the special diseases to which it is applicable.

Gastralgia.—All infants are liable to transient attacks of painful colic, arising from temporary distension from accumulation of gas in the stomach, or from the presence of acids. But artificially fed infants more particularly are occasionally subject to a violent, protracted and intensely painful form of gastralgia in which appetite and digestion are suspended, accompanied with rapid reduction of flesh and strength, sufficiently to endanger life. Vomiting may or may not be present. There may be slight diarrhœa or constipation. The affection is invariably attended with wasting of the tissues and suspension of development, anxious and contracted facies, but no fever except in advanced stages, when gastritis or duodenitis may be developed. Pain is the great and absorbing feature of the disease, which is a never-ending source of suffering to the little patient, and a source of perplexity to friends.

The disease may appear at a very early age. It does not appear to be associated with any organic lesion. It does not partake of the intermittent character of ordinary colic. But the pain is almost constant and unceasing, without relief from opiates. The abdominal walls are usually retracted. The shrill penetrating cry of these little sufferers may often be heard, to the dismay and distress of all, pervading the entire house, day and night, except when under the influence of opium. On one occasion a feeble, emaciated little infant was brought to my office suffering with this affection, for treatment. Such were the shrill and distressing screams of the little creature, the wasted and piteous expression, that all transient callers were compelled to leave the room. The mother was robust and apparently in a vigorous

state of health, and afforded an abundant supply of nourishment.

I think in this case the child was suffering from an aggravated form of acidulous dyspepsia, with simple irritation of the gastric and duodenal mucous membranes. In two or three months this wretched little sufferer, under the turpentine treatment, combined with a few simple anodyne and alkaline remedies, was converted into a rosy, fat, merry, healthy infant. I have found the following formula a useful remedy in this class of cases:

℞	Mucilag. acac.	fℨiss	
	Sodæ bicarb.	xgrs	
	Chloroformi.	xgtt	
	Ol. terebinth.	ℨss	M

Sig.—A teaspoonful every two or three hours to an infant of six months.

Intestinal Catarrh of Infancy.—Catarrhal inflammation of the lower ileum, cæcum, and colon, is well known to be one of the most frequent and fatal diseases of infants during our hot seasons. The inveterate dyspepsia of the artificially fed infant, subsisting on cow's milk, arrow root, and other farinaceous food during dentition, united with the depressing influence of heat, constitute the most fruitful source of intestinal catarrh. The enormous amount of lactic, butyric and acetic acids generated in the stomach and intestines of those dyspeptic infants subsisting on these particular articles of diet, act as corrosives and destructive agents on the delicate epithelium. Thus a constant process is going on in those cases of exfoliation of epithelium and erosion of the submucous coats of the large intestine. The succeeding steps are engorgement, inflammation, ulceration, and softening.

Only about one-fourth of the entire number of artificially fed infants digest cow's milk perfectly. The remainder either digest it indifferently, or not at all. They, the latter, must pass through the lactic acid stage, with its attendant dyspepsia, pain, discomfort, more or less protracted intestinal catarrh, with its peculiar type of low fever, which resembles in many respects, in a striking manner, typhoid fever. The mouth and tongue are dry, red, and aphthous. The skin is dry, parched, and shrivelled. The pulse is quick and the temperature high at night. The abdomen is usually distended and tender on pressure. The intestinal discharges are muco-sanguinous and often frequent. The emaciation is always great. This, which is in ordinary termed the chronic diarrhœa of infancy, with its attendant pain, low fever, and emaciation, is a scene so often witnessed that we are prone to take a superficial view of these cases without penetrating further into the true pathological principles involved. I believe that genuine typhoid is not a more perfect example of septic fever than the form under consideration. Not only the intestinal contents, while in a state of fermentation and putrefaction, afford septic material for absorption, but the débris of broken down and sloughing tissue from softening and ulceration, furnish also materials for infecting the blood, and the production of true septicæmia. Hence in these cases we have to deal with a disease far more complicated than a simple diarrhœa. We have here an example of a local lesion and septic fever united.

The excess of lactic acid is also responsible for the presence in these cases of that inveterate form of intertrigo, which aids in impairing the general health. The acid here acts as a destructive agent on the delicate cuticle, leaving the cutis exposed and inflamed. In other words, the cuticle is destroyed by contact with the corrosive acids in identically the same manner that the epithelial coat of the intestine is from the same causes.

Infantile life is the acid stage of human existence, as old age constitutes the alkaline period. In infancy we are called upon to contend with the effects of acid development and action, while in old age the enemy that besets its course is of an alkaline character, in the form of ammonia. To repair the damages resulting from catarrhal inflammation of the intestines, restore lost epithelium, reëstablish suspended secretion, heal erosion of mucous membrane, the turpentine performs a good part.

Dysentery of Infancy.—In the primary stages of acute dysentery, when the symptoms are violent and accompanied with much fever, tenesmus and pain, the acute features may be much modified by the use of minute doses of mercury (mild chloride), ipecac, and bicarbonate of soda, followed by the tartrate of soda and potash in sufficient quantity to clear the intestinal tract effectually. This procedure relieves the intense engorgement of the mucous membrane of the large intestines promptly before disorganization begins, and diminishes inflammatory action, and improves the state of the secretions. The powers of digestion and the febrile conditions are also benefited by the proceeding. The following formula may then be resorted to with infinite benefit:

℞	Mucilag. acac.	fℨi	
	Ol. terebinth.	fℨss	
	Ol. resini.	fℨss	
	Aq. menth. pip.	fℨiij	M

Sig.—A teaspoonful to a child of six months every 3 hours.

In connection with this treatment, anodyne enemata, composed of tinct. opium and mucilage, should be resorted to, to allay pain and procure sleep. In the advanced stages of this affection, when the fever assumes a depressed type, the general system begins to suffer seriously from emaciation and constant fever, when the tongue becomes red and dry, indicating great general prostration and a tendency to disorganization of the mucous membrane involved in the inflammation, in my experience the turpentine is among the best agents for arresting this state of affairs, and turning the tide in the direction of health and of reëstablishing a reparative process.

In some cases in the stages of disorganization I have combined the oil of turpentine with the oil of yellow sandal-wood with positive benefit. It may be found also advantageous to combine the turpentine with other agents of an anodyne, alkaline, astringent or antiseptic character.

The local anæsthetic or anodyne influence of the oil of turpentine on the gastro-intestinal mucous membrane is very considerable, which adds greatly

to its value as a remedial agent in the treatment of this class of affections.

Enteritis of Infancy.—While simple, uncomplicated enteritis is not a frequent disease of infancy, yet it occurs occasionally, and is always of serious import at this tender age. Enteritis is manifested by the presence of slight fever, moderate diarrhœa, prostration, and paroxysms of violent spasmodic, nauseating and depressing pains in the abdomen, occurring particularly one or two hours after taking nourishment. During these attacks the pulse becomes frequent and feeble, the surface and extremities cold and often livid. Relief only comes after the passage of the contents of the intestines through the diseased duodenum, jejunum and ileum. The severe paroxysms of pain do not occur usually until the contents of the stomach have escaped from the organ into the small intestines.

Enteritis is invariably accompanied with loss of appetite and impaired digestion. Nausea and vomiting in a more or less degree are usually present. Consequently the tendency to emaciation and reduction of strength are marked. In the treatment of this affection I have found the following formula more useful than any other:

℞	Mucilag. acac.	f℥i	
	Aq. menth. pip.	℥ss	
	Ol. terebinth	gttxii	
	Tinct. belladon.	gttx	
	Aq. calcis.	f℥iss	
	Tinct. opii. deod.	gttx	M

Sig.—A teaspoonful for an infant one year old every three or four hours.

As an adjuvant to the turpentine treatment in the painful affections of the intestines and stomach of infants, the belladonna has given me much satisfaction, and more particularly when the discharges are frequent.

Unclassified. Painful Functional Affections of the Stomach and Intestines of Infants.—Infants which subsist on cow's milk and vegetable food principally, are liable to frequent attacks of pain and discomfort from irritations of the alimentary canal arising from imperfect, slow and tedious digestion, which may interfere seriously with the health and growth of the subject. These attacks may be purely of a functional character, or partake of a mild catarrhal nature, with slight fever. The intestinal discharges in these cases usually present an unhealthy appearance and are often extremely offensive, indicating a state of fermentation and putrefaction. The stimulant and carminative virtues of the turpentine, united with its antiseptic and anodyne properties, render the remedy peculiarly appropriate to this class of cases, particularly when combined with lime water and minute doses of carbolic acid.

In the class of cases treated of in this paper the oil of turpentine, as a remedial agent, is not presented as a *sine qua non*, but as a valuable agent to fill a place, and as an effective means of coöperating with other treatment for the relief of the many aggravated, painful and difficult affections of the gastro-intestinal canal of infants.

TRANSPLANTATION OF CONJUNCTIVA FROM THE RABBIT.[1]

BY EUGENE SMITH, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN DETROIT COLLEGE OF MEDICINE.

It is not my intention to go into the history of transplantation of conjunctiva from rabbit to man, but simply to report a successful case, and the method followed. Allow me to premise, however, by saying that in the winter of 1873–4 I saw De Wecker, of Paris, make the operation wherein he placed the conjunctiva, after removal from the rabbit, on a microscope slide over a tumbler of hot water to keep it moist and warm before transplanting.

In 1881, at the International Medical Congress in London, which I had the honor to attend as a delegate from this Association, Dr. Dufour, of Lausanne, reported several cases, in two of which he adopted the method followed by De Wecker. The same year—1881—it was my good fortune to assist Dr. Wolfe, of Glasgow, in a successful case, in which, instead of using hot water, he placed the conjunctiva to be transplanted on the back of his hand, transporting it in that way to the patient's eye. This method was so simple in comparison that it is the one I have since adopted in two cases, only one of which was a success.

Mr. S. F., æt. 26, was burned in the right eye with molten iron in September, 1885. He consulted me several weeks after the injury, at which time the upper and lower lids were attached to the inner half of the eyeball, the cornea being covered at its inner two-thirds. There was still a great deal of inflammatory reaction, and I advised postponement of operative procedure.

On January 25, 1886, about five months after the injury, I transplanted conjunctiva after the method of Wolfe, as described by him in the *Annales d' Oculistique* for September–October, 1881, in his report of the case in which I assisted. My operation was made in the presence of the class of the Detroit College of Medicine.

It is not an easy task to remove so thin a membrane as the conjunctiva and transplant it. The moment it is dissected it rolls upon itself and it is nearly impossible to recognize the epithelial surface again. Sutures even do not prevent this tendency to roll up. For the purpose of recognizing the epithelial surface, three or four sutures are placed in the conjunctiva before it is dissected from the rabbit, the suture being long and the needles left *in situ* for use in grafting. Dr. Wolfe suggested and practices placing the conjunctiva on the back of the left hand, where it adheres and dries after being spread out. A little warm water suffices to moisten the conjunctiva and make its removal from the hand easy, when the eye is made ready for its reception.

The difficulty in holding the lid everted is overcome by passing three sutures through the border of the lid, with the ends of which the lid is controlled and kept in the required position. By this means

[1] Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Seventh Annual Meeting of the American Medical Association.

the annoyance of having the lid fly back just at the critical moment is avoided. From four to six sutures are all that are necessary to maintain the graft in position. In my case I tied the sutures so tight that they came out the third or fourth day without assistance. This is my habit with conjunctival sutures in general.

For the success of this case I feel indebted to Dr. Wolfe, and I have do doubt that if his precepts be followed by others more successful cases will be reported, and the operation become one of the regularly recognized operations, rather than a curiosity in ophthalmic surgery.

219 West Fort Street, Detroit, Mich.

CHLOROFORM AS AN ANÆSTHETIC.

BY T. J. HUTTON, M.D.,

OF FERGUS FALLS, MINN.

FORMERLY RESIDENT PHYSICIAN IN THE LONG ISLAND COLLEGE HOSPITAL, AND IN THE BRIGHAM HALL ASYLUM.

While interne in the Long Island College Hospital fifteen years ago I had many excellent tutors; taken all in all the faculty as a whole seemed to me the personification of wisdom and professional enthusiasm. On one point, however, there was a serious breach of harmony: one used chloroform, one ether, another a mixture of the two, with or without alcohol, etc. On entering upon private practice, I chose chloroform as my anæsthetic, and have now used it exclusively for fifteen years. Never, except in consultations, when I always defer to the preference of counsel, have I used any other anæsthetic than chloroform.

In discussing this subject there are three questions which should be answered: 1. How often have I administered chloroform to complete insensibility? 2. Under what limitations? 3. With what results?

1. I have administered chloroform to the surgical degree of anæsthesia about three thousand times; I have not kept a record of the cases, but I am sure that this rather falls short of than exceeds the truth.

In the Schuylkill, Pennsylvania, coal region, where I spent the four and a half years subsequent to leaving hospital, the Fates and their congeners the Molly Maguires held high carnival. Mining accidents, entailing all degrees of mutilation, were of almost hourly occurrence; and bullet wounds were sufficiently frequent to keep one quite in practice in that interesting department of surgery. It was not a rare occurrence to administer an anæsthetic to two or three patients daily. Although eleven years have passed since I left that interesting field of labor, I can still distinctly recall single days in which I had three serious accidents to treat, each requiring an anæsthetic. During those four and a half years I must have administered chloroform at least fifteen hundred times; in the past eleven years certainly no less.

2. Under what *limitations?* I do not administer chloroform to every one; and a rule from which I rarely deviate is to administer from a dram to an ounce of brandy, or whiskey, a few minutes in advance—according to the age of the patient. I do not administer it to persons with serious organic ailments, nor to scrawny individuals whose midgety stock of vitality is taxed to its utmost in normal respiration. Whole forenoons are not spent in stethoscopic determinations of heart lesions; a rapid survey of the *tout ensemble* —heart, pulse, tongue, general appearance and recent history, determines the fitness or unfitness for chloroform. All subjects must by no means be free from flaw, but granted the necessary soundness, it is used for both sexes, for all ages, for all manner of operations. A child a few weeks old was operated on twice under chloroform, first for cleft palate, again for hare-lip. A woman aged 66, subject to violent attacks of hystero-epilepsy, was reduced to insensibility by chloroform at least a score of times. It is always administered in the second stage of labor—to partial or complete insensibility, as the case may require—except in rapid or painless labors, or that the patient object. I remember but three who persistently objected, and all who took it once demanded it in subsequent deliveries. In a case of convulsions before labor in a primipara, bleeding, croton oil and sedatives failing to arrest them, four pounds of chloroform, administered alternately during four days and nights, stopped them. Convulsions began Monday; stopped Thursday. On the following Sunday a large healthy child was born. Mother and child doing well. I shall not wonder if this case prove unique in the quantity of chloroform administered. There are some further limitations to its use, which some may consider trifling, and perhaps unworthy of mention, but which I regard as the key to this question: *First*, I use Squibb's chloroform exclusively. Notwithstanding my familiarity with chloroform in general, I would still feel extremely chary were I compelled to use any other manufacture. *Secondly*, I will not administer it with a patient's head elevated. Dentists have offered greatest seductions in this direction. Sent for by them I go to find patient all ready, *sitting high up in chair*. "You must place patient on lounge with head low as body or I shall not administer it" is my invariable, inflexible charge. Once a little lady sat thus waiting, who, though free from heart or other organic lesion, was as impressible as mercury—as electric as the famous fish. Her pulse ran 122. "Not for a million dollars, Mrs. C., would I give you chloroform," I said, and after a glass of stiff port the extracting proceeded without anæsthetics. *Thirdly*, I will only administer it on my "rag," which is extemporized in five seconds on the spot. A piece of old sheet or shirt about $2\frac{1}{2} \times 3$ inches and four or six folds in thickness is saturated with chloroform. After the stimulant is given this is held for the first whiff or two about four inches from the nose, then advanced to three, two, or one inch, and curved towards the nose, is so held until insensibility is obtained. It need scarcely be written that the patient's clothing, particularly the neck-gear, must be abundantly loose, and that a quiet, trustful, passive condition must be enjoined on the part of the patient; "now close your eyes—breathe in long and gently." Covering the back of the rag with a piece of pasteboard saves chloroform by preventing evaporation; and it will be readily seen that our rag permits of a free admixture

of air with the chloroform inhaled. Pure air in abundance is admitted to the operating room, and it is kept pure by admitting none but those whose services are absolutely necessary. *Fourthly*, with one hand I administer the chloroform and with the other I hold the pulse. Any change is instantly noted and I act accordingly—desist or push to completion. *Fifthly*, when the thermometer is 90° or more in the shade I will not give chloroform to the degree of insensibility if the operation can possibly be postponed, for reasons to be stated under *Results*.

Sixthly, in many intelligent families where I had administered it in their presence, where the indication remained longer than I could myself remain, I entrusted the administering of chloroform to friends of patients. This has happened time and again, in all manner of convulsive troubles, the four pounds already referred to being among the number. As to the number of times I have given chloroform to the degree of partial insensibility, or that it has been administered by my patients' friends to this degree under the strict precautionary rules already cited, I cannot state the number; but it was certainly used a *very great* number of times. Why should it not have been when I have always assured doubting, intelligent people that "used as I direct, it is safe as water." A recent article would indicate that some one has administered it internally almost as freely as water—teaspoonful doses oft repeated; but of its internal effects I know very little. I have prescribed it internally only in tbe form of spirits of chloroform; this only a dozen or score of times in lesser convulsive affections of middle age, and always with satisfactory results.

Finally, *with what results have I used chloroform as an anæsthetic?* What success? what failures? what major or minor accidents? I have always scrupulously and religiously adhered to the precautions mentioned. I have never had a death occur directly or remotely chargeable to the effects of this anæsthetic. Never was there any alarming accident. Never did the heart fail, necessitating resuscitation. Never was an operation interrupted or its administration suspended because of systemic failure. In four instances the patient would not go under, *i. e.*, could not be rendered insensible. This is the sum of all the singular or noteworthy phenomena that I have observed. Two of these four patients were females. I saw them a year or two apart, and it was so long ago that while I remember distinctly the main circumstances, I forget the details. The other two were healthy young men—Germans, in their prime. Both were traumatics. One had his fingers torn by machinery; the other had shot off a thumb. All four rebellious patients were seen in very hot weather, when the mercury stood 90° to 100° in the shade.

I know that generalizing is always dangerous, more especially when based on meagre data; yet I dare to believe that these failures to anæsthetize were due to a peculiar condition of the blood and nervous centres induced by the extremely high temperature. This view is confirmed by the fact that by waiting until the evening hour these patients "went under" chloroform kindly and promptly.

To my mind ether could never fill the place of chloroform. The huge quantity of ether required drains finances for freightage. Its louder all-pervading odor in the operating-room is no argument in its favor. No more are the silly colloquies, the vomiting, genital irritations, and erotic séances. Moreover, time is valuable to most practitioners; all can not well afford the indefinite time required for etherization.

Finally, as to safety—the greatest of all considerations—I have, in consultations, seen two deaths occur under ether, one directly chargeable to it, the other indirectly, whereas, as already stated, *I have never witnessed any ill results from chloroform.*

Fergus Falls, Minn., Aug. 12, 1886.

OCCLUSION OF VAGINA WITH RETENTION OF MENSES.[1]

BY J. W. MEEK, M.D.,
OF CAMDEN, ARK.

My object in reporting the following case is simply to make a contribution to the history of a rare and sometimes serious affection.

I was called in November, 1885, to see a young lady, aged 15½ years, who was suffering with complete retention of urine, of thirty-six hours duration. This was my first professional acquaintance with the case. The retention was promptly relieved with a catheter. Two days afterward retention again occurred, and was again relieved. I now sought more minutely into the case, and learned that she had never menstruated but twice, first six months, and last three months prior to this time. Each menstruation was preceded by weight in loins, bearing-down pains, and partial retention of urine. After a week's duration of above symptoms a sudden *gush* of menstrual fluid gave immediate relief.

I made a thorough vaginal examination, and at the depth of about one inch from the ostium vaginæ I found a tense, elastic membrane, bulging downwards, with a sensation of fluctuation above it, completely obstructing the vagina. The nature of the case was clearly made out. A pyriform tumor could be felt over the hypogastrium. The fluid, at the previous menstruations, had evidently ruptured the dam each time, but it had been each time after menstruation very neatly repaired.

Realizing the danger that sometimes attends operations for the relief of these affections, I proceeded cautiously as follows: The large needle of an aspirator, detached from the aspirator, was thrust through the obstruction and permitted to remain there for several hours. About one pint of tarry fluid slowly passed through the needle. The needle was then withdrawn and the remainder of the fluid was permitted to flow through the orifice made by the needle. Ten days afterwards no trace of the orifice made by the needle could be seen, and an operation was commenced for the permanent relief of the condition. The patient was placed in the lithotomy position, and the labia separated with retractors. A small

[1] Read before the State Medical Society of Arkansas, April 29, 1886.

opening with a pair of scissors was cautiously made in the centre of the obstructing membrane. About one ounce of fœtid menstrual fluid was discharged. The opening made by the needle had closed before giving exit to the entire collection. I thought it best to again defer any extensive operation lest the wounding of the soft parts too severely might lead to the absorption of poison from the remaining fluid, which by this time had become septic. The fluid was washed away with warm water and patient kept in bed.

Two weeks later the operation was completed as follows: Through the opening previously made a Caros female urethral dilator was introduced and expanded until the membrane was put on the stretch. Incisions were now made with a hernia knife at several points. A small bivalve speculum was then introduced and widely expanded. The entire obstruction gave way, and the only dressing applied was lint saturated with glycerine.

Since then she has enjoyed excellent health, and I feel sure is now prepared to discharge all the duties and functions of womanhood.

As I said in the outset, operations of this kind are, though very simple, sometimes attended with serious consequences. Sims, in his "Uterine Surgery," advises against making a free incision, and Holmes says that all operations performed for the relief of these obstructions, after an accumulation of the menses has taken place, are attended with peculiar danger. To account for the phenomena sometimes following operations on these parts, he offers the following:

1. That the retained fluid, on the admission of air, is peculiarly liable to undergo decomposition and may thus lead to metritis, peritonitis, and death.

2. That when the hyperdistension of the uterus is relieved suddenly, contraction of that organ may set up and the fluid forced backwards into the Fallopian tubes may rupture the same.

Rupture of these tubes may also take place before any operation has been performed.

Post-mortem examinations have verified the above. In view of these facts, an early puncture, permitting the fluid to gradually pass away, is imperatively demanded.

As to the cause of the closure of the vagina in the case narrated, I can only say that it was clearly acquired. The membrane was of a cicatricial nature, apparently formed by union of the anterior and posterior vaginal walls. The mother informed me that the child had once suffered from seat worms (oxyuris vermicularis), and that these were known on one occasion to migrate into the vagina, giving rise to considerable leucorrhœa.

MEDICAL PROGRESS.

INTRA-VENOUS INJECTION OF SALT SOLUTIONS.—In a paper read before the Boston Society for Medical Improvement, on April 5, DR. F. B. HARRINGTON says: The effort to prevent death, which threatened as a result of the loss of blood, led at an early period in the history of medicine to transfusion. The use of the blood of animals and of blood which has not been defibrinated has been abandoned as dangerous. The blood of distinct species seem to possess toxic influences, and undefibrinated blood of the same species is dangerous, because of the occurrence of clots. Excellent results have been obtained by the use of defibrinated blood, but it is always difficult and sometimes impossible to obtain sufficient human blood for transfusion. This has led to the use of various substitutes for blood such as milk, egg albumen, peptones and the like. These although of value possess some elements of danger. The intravenous injection of salt solutions was extensively practised in the cholera epidemic of 1832–33. It was again used in later epidemics. It produced marked temporary improvement, but did not effect the final result.

Within late years it has been found by experiments on animals, that those dying from loss of blood could be resuscitated by the injection of solutions of common salt. Salt solution is an indifferent fluid, and the beneficial effect is supposed to be due to the increase in volume given to the blood remaining in the system after bleeding. In progressive anæmia life may continue, although the red corpuscles are reduced to less than one-tenth of the normal number; a reduction greater than would ever occur from hæmorrhage. When the red corpuscles remaining after severe bleeding are brought into circulation by a harmless medium the danger of death is diminished. Moreover the increased volume of the current gives the heart something to contract upon and its action becomes slower and stronger.

Ott, as the result of recent experiments, claims that the beneficial action of blood transfusion in acute anæmia may be explained only by the introduction of a certain amount of fluid into the circulation. The theory of the "transplantation" of blood by means of transfusion he believes is untenable, being disproved by experiments. Maydl, on the other hand, in his experiments on dogs was able to save more animals by defibrinated blood than by salt solution. He says we must recognize two forms of death from hæmorrhage. In one there is anæmia of the nerve centres, although blood enough to sustain life still remains in the body. In these cases stimulation, position, and auto-transfusion are usually sufficient to prevent death. In rare cases the injection of salt solution may be necessary. Death in the second form is due, he believes, to such a loss of blood that there are not enough of the normal constituents of the blood left to sustain life. In this case the transfusion of blood becomes necessary; or salt infusion may be immediately performed, to be followed in a short time by the transfusion of defibrinated blood.

Ott and Maydl thus differ in their estimation of the value of blood transfusion, yet both agree as to the value and the lack of danger in the careful use of salt solution. The difficulty of obtaining a proper quantity of defibrinated blood at short notice, and

the ease with which saline solutions can be made, certainly predispose in favor of the latter.

In 1883, Dr. Bull collected and tabulated nineteen cases in which salt solution had been used as a substitute for transfusion. This table is presented with ten new cases which I have collected.

Schwarz's solution is a saline solution made slightly alkaline by sodic hydrate.

To sum up, we have one case (3) of iodoform poisoning, three cases (14, 15, 16,) of poisoning from illuminating gas. These four cases recovered. There were four cases of collapse. Two (21, 29) from peritonitis, one (28) from septicæmia, one (23) from shock. These cases showed temporary improvement, but all died. One case (2) of incomplete removal of uterine carcinoma after temporary improvement, died; one case (5) died on the following day from amyloid degeneration of the remaining kidney, the other having been removed; one case (6) recovered from the hæmorrhage, but death followed in six days from septicæmia: One case (7) recovered, but died in three weeks from peritonitis, one case (10) died in three hours, the result of a second hæmorrhage from a gastric ulcer; one case (17) of nephrectomy after temporary improvement died in twelve hours; one case (24) recovered from the hæmorrhage and died in five days of peritonitis. Of the above-mentioned fifteen cases, four recovered. The others died from some cause other than the hæmorrhage. There remain fourteen cases of which thirteen made complete recovery. One case (25) died immediately. If correctly reported the injection of over sixty-six ounces in fifteen minutes must be looked upon as a dangerous proceeding. It is the only case favorable for the operation, in which there was no improvement.

Experience has shown us that the system will bear the loss of very large amounts of blood. Maydl found that dogs would sometimes bear the loss of two-thirds of the blood volume and recover without transfusion or intra-venous injection being performed.

To determine when intra-venous injection is demanded is a question of judgment of the patient's peril, and not a question merely of the amount of blood lost. All ordinary means should first be tried. If these fail the salt-solution may be necessary. The best form of solution is made as follows:

Sodic Chloride	6 ℥iss.
Sodic Bicarbonate	1 gr. xv.
Aqua Distillata	1000 oii +

Care should be taken that the solution be perfectly free from débris. Water that has been boiled and filtered or pure water that has been filtered will answer the purpose. The solution should be warmed and kept at a temperature between 100° and 104° F. A reservoir with a rubber tubing and a canula of small size make the best injection apparatus. No air should be allowed to enter the current. The solution should enter the circulation at a low pressure and its effect on the heart should be carefully watched. Gravity pressure is safer than a syringe. An elevation of one and one-half to three feet is sufficient. The amount used must depend upon the effect upon the circulation, but may be from one to four pints. If a vein can be found in the arm it may be used. This can usually be accomplished if a ligature is placed about the arm above the elbow and the blood in the forearm is pushed toward the elbow, by the hand or by bandaging. If the vein cannot be found, the artery may be used. The salt-solution should not be allowed to enter the circulation too rapidly, lest the heart be overpowered. The simplicity of the operation, its great efficacy in cases of simple acute anæmia and the lack of danger in its careful use makes it the duty of every practitioner to be prepared to make trial of this means of saving life when the necessity arises.—*Boston Medical and Surgical Journal*, May 27, 1886.

Ergot in the Third Stage of Labor.—Dr. V. M. Reichard, of Maryland, says in regard to "Ergot in the third Stage of Labor, and its Influence in Preventing Septicæmia:" It is an agent of the greatest utility in the third stage, and especially in the post-placental period. Those authors who are most chary about giving ergot advise its use when the head is about passing the vulva. This, however, may cause trouble. With an adherent placenta—and there are some men who find these cases are not extremely rare—the drug may cause such severe contraction as to interfere seriously with the operator or indeed imprison the placenta within the uterine cavity. The safest rule by far is not to give ergot until the placenta is in the vagina or escaping from the mouth of the womb. Given at this time and in full and sustained doses, too much cannot be said in its favor. It lessens or prevents after pains; it hastens involution to a marked degree; and it reduces to a minimum the dangers of septic absorption. In this latter direction I conceive lies its greatest usefulness. The situations most favorable for the absorption of septic organisms are the denuded placental site and the occluding thrombi in the mouths of the uterine sinuses. By securing firm contraction or hypercontraction both these dangers are met. The uterine cavity being emptied thoroughly and kept almost entirely in a state of tonic contraction, the discharges are carried out at once, the placental site is reduced to the smallest size, and the thrombi have the serum forced out, thus diminishing their value as propagating media for septic organisms.

The facts bear out these assertions. I have found that women who are thus treated with ergot do better than those who are not. The temperature scarcely rises above the normal, and they are in better condition at the end of the lying-in period. In a recent case in which the placenta was remarkably adherent, all judicious efforts failed to remove the entire placenta. The injury to the uterine surface by prolonging further the efforts at removal was judged to be greater than the danger of leaving behind a piece of placenta. The woman was given a drachm of ergot every four hours. In twenty-four hours the lochia were very offensive, and on the third day a goodly-sized piece of placenta was discharged in a putrid state. At no time was the woman's condition at all serious. I do not wish to be understood as saying that every effort should not be made to remove the entire placenta. But what I do say is that ergot will so seal

the uterine absorbing surfaces that a putrid piece of placenta may be retained and no bad results follow. Whether it be only a coincidence or the effect of a cause, opinions may differ; but I am sure that since giving ergot to every woman immediately after the expulsion of the placenta my cases do a great deal better than before I commenced to give it.

To sum up: Ergot should not be given until the placenta is under entire control; then should be given several doses in quick succession until the womb is well contracted and low down; and after this a drachm every four hours. The rapidly-repeated doses may cause vomiting, but I have never seen any bad results follow this. On the other hand, the womb seems to contract more forcibly.—*Philadelphia Medical Times*, September 4, 1886.

TREPHINING IN HÆMORRHAGE FROM THE MIDDLE MENINGEAL ARTERY.—In the past three years, Krönlein has opened the cranial cavity for hæmorrhage from the middle meningeal artery and resulting hæmatoma in four cases where neither wound of the skin. nor fracture of the skull existed.

The diagnosis was correctly made in every case. In each instance there was found a marked supra-dural extravasation in the region of the arteria meningea media. Two patients recovered. Cerebral hæmatoma may be (a) diffuse, or (b) circumscribed. Of the latter (b), Krönlein makes the following classification according to the seat of hæmorrhage:

First. Hæmatoma media, or tempero-parietale, of the middle cerebral fossa (a region supplied by the trunk and anterior or posterior division of the arteria meningia media) due to hæmorrhage from the anterior branch of the anterior division.

Second. Hæmatoma posterius, or parieto-occipitale —parietal eminence—due to hæmorrhage from rupture of the posterior branch.

Third. Hæmatoma anterius, or fronto-parietale—frontal eminence.

The tempero-parietal region is the most common seat of injury (a) from the vulnerability of the region, (b) from the size and number of vessels, it being the seat of the trunk and the main branches. All hæmatoma are accessible at the anterior inferior angle of the parietal bone, with the exception of the circumscribed ones of the parieto-occipital region. If the hæmatoma is not found here, the parieto-occipital region must bc explored, and the point for trephining is under the parietal eminence. Krönlein's indications for surgical interference are symptoms of cerebral compression, and his rule for locating the points for operation are as follows:

1. A line called the horizontal line of the skull, namely, one passing from the infra-orbital border to the external auditory meatus.

2. A horizontal line parallel with the above, and projected backward from the supra-orbital ridge. Both points of operation are in this line.

(a). The anterior; three to four cm. posterior to the zygomatic (ext. angular) process of the frontal bone.

(b). The posterior; at the point of intersection of the above horizontal lines, and one projected vertically, from a point just posterior to the mastoid process.

Krönlein claims that a double operation is indicated not only in cases where a single perforation fails to find the seat of extravasation, but also in cases of diffiuse hæmatoma, since the clot can be more completely removed, and also a better opportunity afforded for drainage, should such be necessary.—*Boston Medical and Surgical Journal*, Aug. 26, 1886.

BROMIDE OF ARSENIC IN DIABETES.—MOOCK (*France Méd.*, Feb. 25, 1886); reports the case of a woman æt. 54 years, who had probably had diabetes about four years, and who also had phthisis in the stage of cavity. She was much troubled with valvæ pruritus. Small doses of bromide of arsenic were given, together with iodoform, and in two weeks the pruritus had entirely disappeared and the chest symptoms were much ameliorated. At first she was given gluten-bread, but afterward was allowed ordinary bread toasted. The improvement continued for two months, at the end of which the sugar passed had been reduced to not much more than one-twentieth of the original quantity, and the chest symptoms were quite checked, although a cavity, of course, remained. DR. N. S. DAVIS, JR. (THE JOURNAL, May 8, 1886) has reported excellent results with bromide of arsenic in conjunction with a strict anti-diabetic diet.—*New York Medical Journal*, September 18, 1886.

INTRAPERITONEAL INJECTIONS IN ACUTE HÆMORRHAGE.—RÜTGERS records the case of a woman who, as a result of post-partum hæmorrhage, was in a state of profound collapse, and whose veins, after ligature, did not swell, so that no indication for the site of an intravenous injection was obtainable.

A solution of sodium chloride 90 grains, sodium hydrate 5 grains, and distilled water 34 fluid-ounces, was accordingly introduced into the abdominal cavity by means of a trocar. After three days, during which abdominal pain and subnormal temperature obtained, the general condition was excellent.

It is evident, from this experience, that the absence of swelling in veins after ligature is no sure sign of actual death, and it is suggested that the method described may replace that of hypodermatic injection of water in Asiatic cholera.—*Centralb. f. d. med. Wiss.*, Aug. 7, 1886.—*Medical News*, Sept. 18, 1886.

VIBURNUM PRUNIFOLIUM AS A PREVENTIVE OF ABORTION.—CHÉRON (*Gaz. de Gynécologie*, July, 1886) recommends the following:

Tincture of viburnum prunifolium		40 minims.
Elixir of garus,[1] Simple syrup,	each	1 ounce.
Distilled water		2 ounces.

A tablespoonful every hour, or half hour, as required.—*N. Y. Med. Jour.*, Aug. 7, 1886.

ARTIFICIAL COCAINE.—MERCK, of Darmstadt, has succeeded in preparing an artificial cocaine which possesses all the properties of the natural product. Benzoic ecgonine is treated with methyl iodide and a certain quantity of methyl-alcohol at 100° C. Benzoic methyl-ecgonine is thus obtained, and this substance is cocaine.—*Phila. Med. Times*, Sept. 4, 1886.

[1] Consisting of the compound tincture of saffron and an aromatic. The former contains aloes, saffron, cinnamon, cloves, and nutmeg.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, SEPTEMBER 25, 1886.

BRITISH MEDICAL ASSOCIATION—ANNUAL MEETING IN BRIGHTON.

The recent annual meeting of the British Medical Association at Brighton, Eng., was regarded by those present as one of the largest and most interesting that had been held in many years. Brighton is not only one of the most attractive cities at all times, but is especially so in the summer on account of its admirable location fronting the open sea. It is fortunate, too, in having possession of the Royal Pavilion and its appendages, which were built and occupied as the royal residence by King George IV; in the richly decorated rooms of which all the meetings of the Association and its Sections were accommodated. The general arrangements or programme for the strictly scientific and professional work differed but little from that of the American Medical Association. From two to three hours of each day were occupied in the general meetings of the Association, and three hours of each of the second, third, and fourth days in the several Sections. A part of the first day was occupied by separate meetings of the Council for business purposes, leaving no time for the Sections to meet until the afternoon of the second day. A general programme was given to each member at the registration table, and the subsequent details of work for each day were posted on the bulletin boards in the morning. The general meetings on the first, second and third days were very well attended, but those of the fourth day attracted comparatively few. Even the interesting and important address on Public Medicine by Dr. Mapother, which was given at 10 o'clock A.M., was listened to by not more than 100 members; and the closing proceedings at 4 P.M. commanded the attention of only about 150. The Sections of Medicine and Surgery attracted the largest attendance; those of Public Medicine and Obstetrics next; while the remaining Sections of Psychology, Pathology, Therapeutics, Ophthalmology and Otology were attended by only small audiences. The President of each Section delivered an address, not to the general body, but to the members of the Section over whom he presided, which evidently served to increase the number in attendance and to promote the interests of the Sections. The number of papers actually read in the several Sections was not large, but as a rule, bore marks of having been carefully prepared by their authors, and in some instances elicited discussions of much interest, while others were passed without comment. In all the particulars to which we have thus far alluded, the doings of the British Association both in the general sessions and in the Sections bore a close parallel to those of our own National Organization. In another respect the parallel also holds good, and that is, in the difficulty of hearing with any satisfaction either the reading of papers or the discussions regarding them, unless in immediate proximity to the reader or speaker. Very few of those who took an active part either in the general sessions or in the Sections were heard satisfactorily over the half of even a moderate-sized audience. And it is this, more than all other things together, that renders the audiences, especially in the Section rooms, uneasy on account of the frequent coming in and going out of individual members. The fault is seldom in the acoustic qualities of the room as is too frequently alleged, but in the reader or speaker himself. The truth is, there are comparatively few members of the medical profession who stand erect with free expansion of the chest, and read or speak with that clearnesss of voice and distinctness of enunciation which is necessary to make themselves heard with pleasure in every part of a fair-sized audience room.

The business management of the British Medical Association is entirely in the hands of the Council, composed at present of about seventy members, a part of whom are elected by the several Branches. This Council selects the places for annual meetings, nominates the officers, arranges the programmes, considers and reports on all matters of business or medical polity, and in submitting reports to the general body, selects the members to move their adoption and others to second the motion, and when these have made their speeches in advocacy of the measure, the time for anything in opposition is generally limited and placed at a disadvantage. Our readers

will remember that prior to the meeting of the American Medical Association in St. Louis last May, considerable discussion was carried on in the pages of this journal on the feasibility of adopting changes designed to approximate the business organization of that body more closely to that of the British Association; and at the St. Louis meeting a committee was appointed to consider and report on the subject at the next annual meeting. One of the prominent objects we had in view while attending the recent meeting of the British Medical Association at Brighton was to study its practical working, with especial reference to examples for imitation in improving our own National organization, and we shall soon devote a few editorial pages to that subject. We will only add here, that the social arrangements and opportunities at Brighton were brilliant in quality and prodigal in amount. At the opening on the first day the members of the Council were tendered an elegant reception and sumptuous lunch by the Mayor of Brighton; on the second evening the whole Association was tendered a brilliant *soirée* by the profession and corporation of Sussex, which includes Brighton; on the evening of the third day was the Annual Banquet in the Rotunda, attended by three hundred and sixty members and a large number of invited guests; in the early part of Wednesday evening the Association of Irish graduates and schools gave an elegant entertainment; and on Friday morning the British Temperance League gave to members of the Association a temperance breakfast, which was not less elegant and interesting than any of the entertainments that had preceded it. In addition to all the foregoing, invitations to small companies for lunches and dinners at the residences of members of the profession in Brighton, were numerous and cordial. The number of visitors from other countries in attendance was large, especially from this country and the British Provinces on our northern border, and all were treated with marked courtesy and kindness. On the afternoon of the third day, in a very full general meeting, the American visitors were kindly invited to present the subject of the International Medical Congress for 1887, which invitation was accepted. The explanations made, ending with a renewed cordial invitation to attend the Congress, were received with approval, and resolutions of thanks and acceptance were passed with genuine enthusiasm.

THE ANTAGONISM OF MALARIA AND SCIENCE.

Certain portions of the very interesting Address of DR. BILLINGS before the British Medical Association seem to have produced a chill of astonishment, followed by a stage of true febrile excitement and other unpleasant phenomena attendant upon malarial attacks, in some of our malarially situated contemporaries. The *causa rigoris* was Dr. Billing's showing that in some parts of the South, and especially in the Mississippi Valley, malaria is very much more prevalent than in the Northern and North-eastern portions of the country, and then asserting that "malaria and science are antagonistic." "It was within the limits of this malarial shadow that the foundation of modern gynæcology was laid by Marion Sims, of abdominal surgery by McDowell, Battey and Gross, of an important part of the physiology of the nervous system by Campbell. Nevertheless, the rule holds good that malaria and science are antagonistic; the exceptions prove the rule."

Before discussing the weighty question as to this antagonism, it may be well to say that exceptions do not *prove* rules; an exception shows that a rule exists, but it cannot show the truth of a rule. For if one exception can prove the truth of a rule, two prove it more fully; and we are reduced to the absurdity of saying that the more exceptions there are to a rule the more hard and fast, and the more universal the rule. Such logic as this gets us into deep water at once.

The Address is illustrated by four maps showing the distribution of deaths from malaria, cancer, consumption and pneumonia, as compared with deaths from known causes in the United States (Census of 1880). Remembering that "malaria and science are antagonistic," the malarial map shows very clearly that the scientific strata in this country were very irregularly distributed six years ago, though the next census may show that recent "terrestrial upheavals" have shifted them somewhat. For example, according to the map the greater part of the science of the country in 1880 was not only west of the Alleghanies, but west of the Mississippi River. The only two States or Territories which were wholly scientific at that time are Utah and Nevada. There is a small scientific strip along the coast of California, sharply bounded on the East by the Central Pacific Railway, and higher up we find a surprisingly large piece occupying the western third of Washington Territory. Then there is an equally rich vein of science running down through Nebraska, Colorado and New Mexico —much better than can be found anywhere on the Atlantic coast. The map shows that very large portions of Dakota, Minnesota and Wisconsin are very much more scientific than the eastern half of Massachusetts, New York and Pennsylvania. Down among the mountains of east Tennessee, too, are large de-

posits of science, as also along the Western coast of Lake Michigan. In short, the map shows most conclusively that there is more science in Utah, New Mexico and Nevada than in all the Eastern portion of the United States north of the Potomac River. Arizona, Idaho, Montana and the Southern part of Illinois are shown to have as much science to the acre as littoral Massachusetts, Connecticut, New York or Pennsylvania. And as malaria seems to be on the increase in the North-eastern portion of the country there is some ground to fear that it will not be long before all the surviving science will flee in terror in the direction of the setting sun, leaving that portion of the country enveloped in a dense fog of malarial ignorance.

The first two maps show, what is not mentioned in the Address, that malaria is antagonistic to cancer; and from this we may draw a very logical conclusion: Malaria and science are antagonistic; malaria and cancer are antagonistic; *ergo*, cancer and science are synergistic, or co-adjuvant; and the more one thinks of it the more will he be convinced that this is what the talented reader of the Address intended to say. For in this case the cancer map would show that as there is more cancer so there must be more science east of the Alleghenies; and our esteemed confrères of the Mississippi Valley would probably have not been so much offended; especially as the Northern part of Louisiana has a very aristocratic death-rate from cancer. The map shows that in some parts of the country the malarial microbe devours the cancer cell with avidity—a true "Battle of Cells and Bacteria" (see *Virchow's Archiv*, Bd. CI, Hft. 1; THE JOURNAL, August 22, 1885). Reasoning on these lines, and looking at the Utah portion of the malarial map, one might be inclined to formulate some such law as "Malaria and polygamy are antagonistic;" for there is a great deal of polygamy in Utah, but very little malaria; and while there is much malaria in the Mississippi Valley there is no polygamy: and this is further borne out by the fact that while the Sultan of Turkey has many wives he is not subject to malaria. Now then, if malaria and science are antagonistic, malaria and polygamy antagonistic, malaria and cancer antagonistic, and cancer and science synergistic, does it not follow that polygamy and science are synergistic? Have we not here a key to the great problem of what to do with the Mormons? Let the Government send half a dozen bacterio-therapists to Utah, each armed with cultivations of the bacillus malariæ.

But are malaria and science antagonistic? It is difficult to say how the question is to be settled. From those who have not been "incidents of a miasmatic cataclysm" there may be a possible affirmative answer to the question; but can we think that they who have had chills and are liable to have others will send any other reply than a unanimous negative? Furthermore, the announcement that the malarial microbes may attack and devour the germs of science is a serious thing for the already scientific man; a matter of tremendous import. What geologist from the unmalarial districts of the North will venture to go and study the effects of the recent earthquake with the possibility staring him in the face of a horde of malarial bacilli attacking his geological germs, like a devastating army of Metschnikoff's phagocytes. And would not his local geological society be justified in expelling him from its ranks, or quarantining him on his return until a quinine war had been waged on the *bacilli malariæ* which might be concealed about his person? This is a serious matter. Imagine the consequence of a member of the American Association for the Advancement of Science actually having a chill at one of the meetings! Or could there be a more dire disaster than such an occurrence in the Concord School of Philosophy? Nevertheless, we find scientific men going boldly to work to hunt up that malarial microbe, and some of our German and Italian confrères claim to have captured it. Can we believe they know their danger, or is it an example of the utter disregard of consequences which sometimes takes possession of scientific men? Men will often fearlessly run risks which may involve loss of life; but it is seldom that they will take the chances of being de-scienced.

Yet, if science and malaria are antagonistic there is still a gleam of hope—one way out of the difficulty; and but one. We regard it as fortunate in medicine when we find something antagonistic to something else which is dangerous; and if malaria be antagonistic to cancer, polygamy and science, the converse must be true. Here then we have a prophylactic indication; instead of planting eucalyptus trees, which must take some years to grow, instead of draining swampy lands, which requires a vast amount of money, let us transplant full-grown cancer patients, polygamists, and scientists to our malarial districts, in such numbers that the malarial microbes must inevitably be overcome and driven from the country. Let a great cry go up from the Mississippi Valley and other malarial districts for an influx of cancer patients from the North and North-east, and scientists from Idaho, Utah and Nevada. And if the remedies prove potent against the evil then we will see that science and malaria are really antagonistic; we will see how

great results may spring from incidental suggestions made in a foreign country; and we will also see

"How *Index*-learning turns no student pale,
Yet holds the eel of science by the tail."

DEATH OF DR. JAMES WAKLEY.

Medical men will sincerely regret the death of the editor of the *London Lancet*, which occurred on Monday, August 30, after a long and painful illness, from epithelioma of the mouth. For twenty-five years he has been known over the civilized world as the great editor of a great medical journal, as the upholder of medical right and the powerful foe of professional wrong-doing—and in all that time, with all his work, and latterly with all his sufferings. he was the friend of poor humanity. He was essentially a journalist, and the type of the great professional editor. The mantle of a great editor (his father) fell upon him, and he showed that he could wear it. Under his management *The Lancet* has grown until now it stands with only one equal. He was, if any man ever was, the friend of the young physician; quick to mark indications of worth, and to open a way for its development. The English public have reason to mourn his death, for he was ever the watchful guardian of public health, and especially of the health of the poor.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.—A letter in the *New York Medical Journal* from DR. F. PEYRE PORCHER, of Charleston, S. C., states that the Medical College building has been so nearly destroyed by the recent earthquake, that an entire new roof will be required and at least the partial rebuilding of the walls, before it can be occupied again for teaching purposes. As the medical men of Charleston have suffered in common with other citizens, severe injuries to their own property, they need prompt assistance from their professional brethren, more especially to aid in restoring the Medical College to its former usefulness. We trust there are some members of the profession in this City who would cheerfully contribute something for this purpose. If so, we will unite with them in sending a remittance directly to the care of Dr. Porcher. "It is more blessed to give than to receive."

THE ILLINOIS COLLEGE OF PHARMACY.—This College will begin its courses of instruction on the first day of October. The instruction rooms, corner Lake and Dearborn streets, are furnished in the most substantial and complete manner. Four laboratories have been provided, for analytical, synthetical, microscopical and pharmaceutical work. The capacity of these laboratories enables 150 students to receive instruction simultaneously, and there are individual accommodations for four such classes, or 600 students. The special laboratory for instruction in dispensing work is an important department introduced by this College.

SOCIETY PROCEEDINGS.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, June 8, 1886.

DR. F. I. KNIGHT, CHAIRMAN.

ALBERT N. BLODGETT, M.D., SECRETARY.

The records of the meeting (on April 14, see THE JOURNAL, May 29, p, 600,) at which the subject of Military Drill was first discussed, were read and approved.

PROF. D. A. SARGENT read a paper on

THE EFFECTS OF MILITARY DRILL ON BOYS.

He called attention to the fact that the primary object of establishing the drill in our schools and colleges was a professional one—to give instruction in military tactics to young men, in order that they might be of service to the country or community in case of an emergency. The war not only gave an incentive to the practice of military drill, but it also furnished a great stimulus to all forms of physical exercise, and especially to athletic contests and games. Within the past few years, physical training has received a new impetus. A large number of school, college, and city gymnasia have been built, and athletic games have obtained a strong hold upon public attention. As the occasion which gave rise to a call to arms grows more remote, the real object of the drill loses its significance, and the advocates for its maintenance in the schools now claim for it superior advantages as a physical exercise. In the City of Boston, the committees to whom the subject of military drill in schools has been referred have placed considerable stress upon this point. In 1883 the committee reported as follows: "Your committee believe that the drill, as now carried on, proves to be not only the *best* for physical exercise for these schools, but that, at the same time, it inculcates a more manly spirit in the boys, invigorates their intellects, and makes them more graceful and gentlemanly in their bearing." In the report for 1874 there is a similar statement. In 1875 the committee state: "We trust that the drills will be kept up, believing that committees having them in charge will see that no form of gymnastics could be substituted from which the boys would derive such benefit." In 1880 the committee say: "The establishment of the military

drill is one of the few provisions made by the School Board for the physical training of the pupils under its charge, and no one who has observed the soldierly bearing of the members of our school battalions can have any doubt of its value as a means of securing a full and symmetrical development of the physique."

Notwithstanding the fact that half of the members of these committees were physicians, I shall beg to differ with them absolutely as to their conclusions concerning the physical effect of the military drill upon boys. In order that we may approach the discussion of this subject more intelligently, let us inquire briefly into the physiology of exercise, and consider some of the facts which observation and experience have determined. Exercise in its simplest sense may be defined as muscular movement produced by muscular contraction. According to the physiologists, "the property of contractility is inherent in the muscular substance, but in normal life the manifestation of this property is immediately determined through the influence of the nervous system. . . .

"A nervous impulse originating at the brain or spinal column travels along the nerves to their terminal expansions in the muscular fibres; on its arrival at the muscular fibre, the nervous impulse is converted into a muscle-impulse. . . . Between the reception of the nervous impulse and the initiation of the visible contractile movement an interval elapses, known as the 'latent period,' which (according to Helmholtz) is probably occupied by molecular changes in the fibre preparatory to its alteration in form. At the close of the latent period the muscle-impulse is succeeded by a wave of contraction. . . . The contraction of the individual fibres produces changes in form of the entire muscle, shortening the distance between its two extremities by increasing its thickness, and slightly reducing its bulk.

"In the voluntary muscles (according to Weber), each contraction is compound in character, being composed of a series of rapid contractions, due to an equally rapid succession of nerve-impulses."

During muscular contractions certain chemical changes take place in the muscle substance, although the exact nature of the metamorphosis is not known. It is known, however, that the blood escaping from muscles in action is much darker than the venous blood of muscles in repose, and that it contains a much greater proportion of carbonic acid. It is also known that a greater amount of oxygen is absorbed by the muscle during the period of contraction, and Gaskells's experiments have demonstrated that the flow of blood through muscle is increased at the time of its shortening. Thus we see that the simplest muscular movements involve a molecular change at the nerve-centre in which the movement originates, in the nerve-fibre that transmits the impulse in the muscle-fibres that contract, and in the blood-vessels that dilate in response to the stimulation. The experimental researches in the physiological laboratory on a single muscle have given us an epitome of what should take place throughout the system at large, in order to realize the best results from exercise.

The consecutive action and harmonious relation of the nervous, muscular, and vascular systems must accompany every effort to improve the physique and render the individual energetic, healthy and strong. How to attain this three-fold result is the problem that the instructor of physical training has before him.

To select at once a system of exercise that will do no harm to anyone, and yet be beneficial to all, is a difficult task, yet we shall come nearer doing the greatest good to the greatest number if we follow what may be termed the physiological method. As near as I have been able to ascertain them, the essential requisites of a good exercise may be summed up in the following suggestions:

1. The person should be sufficiently interested in the exercise to give it his attention in order to secure the necessary volitional power to start the movement. Any exercise executed in a lifeless way is of little benefit to nerve or muscle in a healthy condition.

2. There should be a weight or resistance to overcome in order to bring out the working force of the muscle, the theory being that the muscles were not created merely to move the parts to which they are attached, but to do service and help man bear his burdens. In using a weight, the muscle gradually acquires the force with which it tries to contract.

3. The exercise must be performed with sufficient vigor and rapidity to engage the energetic contraction of the muscles employed. When this is done, old tissue is broken down, and its place is supplied with new material in increased quantity, thus augmenting the size and strength of the muscles. The rapidity of the movement puts a limit to the weight used, and the alternate contraction and relaxation of the muscles assists the circulation of the blood in the parts employed.

4. As many muscles as possible must be brought into action in order to secure a full-orbed and harmonious development of the whole body. One-sided development is usually attained by robbing some other part of its just share of the body's nutriment. It is apt to be accompanied by a functional disturbance of one or more of the vital organs, by inducing malformations of the thorax, or it is likely to lead to the straining of parts that are weak, by gauging their strength by parts that are strong.

5. A sufficient number of muscles should be called into action at one time to stimulate the action of the heart and lungs, and increase the circulation and respiration. This is one of the most important considerations to bear in mind in regard to exercise. The more muscles a person can use at one time, and the more rapid and extensive the movement, the greater the muscular consumption of oxygen and elimination of carbonic acid. In order to sustain this activity in the muscles, a greater amount of oxygen must be taken in, and a greater amount of carbon-di-oxide must be given off from the system. This is accomplished through the respiration. "If a man walks one mile an hour, he breathes twice as much air as when he lies down; if he walks four miles an hour, he breathes four times as much, if six miles an hour, seven times as much." He takes out of this inspired air an increased ratio of oxygen, and eliminates nearly the same proportion of carbonic di-oxide during expira-

tion. To keep up this increased respiratory activity and aid the heart in removing the waste material and hastening forward the new, the limbs and walls of the chest must be absolutely free from any ligatures or constructions. The slightest interference with the action of the respiratory muscles at this time embarasses the functions of the lungs and heart. The chief advantage of exercises that give employment to many muscles at one time is that by increasing the respiration and quickening the circulation, they improve the health and strength of all parts of the body.

6. As a "latent period" precedes the contraction of a muscle, so a momentary period of rest should, as far as possible, precede movement in exercise. This is best secured where there is an alternation in the movements, as in walking, running, rowing, etc. All tetanized movements, such as holding weights, standing in a constricted postion, etc., tend to impair the tone of the muscles by interfering with the nutrition of both muscles and nerves.

7. Observation. The exercises of the young should be of such a composite nature as to bring about the co-operation and co-ordination of the muscles. This involves principally the training of the central nerve system. All gymnastic sports and athletic games that require skill, dexterity, coolness, courage and presence of mind, are included in this list, and are exceedingly valuable to any system of physical training, as adjuncts in the development of character.

My principal objection to military drill as a physical exercise, is that it does not to any extent meet the physiological demands of the body as set forth in the seven observations just referred to. In other words, it is not of sufficient interest as a means of physical development to arouse any moral earnestness and enthusiasm on the part of the boys. The exercise of the manual is not performed with sufficient force and rapidity to engage the energetic contraction of the muscles employed. It is essentially a one-sided exercise, bringing into excessive action the elevators of the right scapula, the deltoid, biceps, flexors of the forearm, wrist and fingers of the right side, while the other muscles, excepting the legs on parade days, do not get sufficient employment to keep them in good condition. It does not increase the respiration and quicken the circulation to a sufficient extent to secure the constitutional benefits that should accrue from exercise.

During the drill the clothing is buttoned close around the chest, and natural respiration is hindered. The muscles are not alternately contracted and relaxed, but are tetanized or kept in a state of prolonged tension. This, as we have seen, not only impairs the tone of the muscles used, but it also puts an additional strain upon the brain and nervous system at a time when both should be as much relieved as possible. Finally, the mere exercise of the manual of arms does not give sufficient breadth and scope of movement to secure the co-operation of the muscles, and as a training for the central nerve system, it is of little or no value.

Coolness, courage, presence of mind, and that rapid and responsible exercise of judgment in emergencies, so valuable to the man of business, as well as to the soldier, are not developed by the drill itself, though I will admit that other moral attributes, such as obedience, patience, fortitude, and forbearance, may be brought to a high degree of perfection. The community at large, have long entertained the idea that there was something about military drill that made young men erect, or, as the committee have been pleased to term it, giving them a graceful and manly bearing.

I dislike to take from the drill one of the strongest attributes that has commended it to parents and teachers, but unless I have been misled in my observations, there is nothing in the drill itself that tends to make one erect or graceful. On the other hand, I am prepared to maintain that it tends to make him stiff and angular in his movements, as well as to droop and round his shoulders.

As no two minds are alike, so no two bodies are alike. But growing out of this great diversity of shapes and sizes, there is a figure around which nature tends to range those of a certain age, height, or weight (according as either is taken for the standard). This is termed the mean or typical boy for a given age, height, etc. Any marked divergence from this standard is readily detected by a casual observer. My attention was long since called to what I think may be termed the prevailing weakness or defects in the school boy's and student's physique. There are a drooping of the head, flatness of the chest, narrowness of the waist, and an exaggeration of the normal or physiological curves of the spine, and I might add to this number, though it is not quite so common in boys as in girls, lateral curvature of the spine. These defects, I say, are so apparent, that it does not take a practised eye to detect them. They attract the attention at once of any one who cares to examine the figures.

The drooping of the head and flatness of the chest may be accounted for by the increased prevalence of myopia, tightness of clothing, and the pressure of the school desk or table on the lower ribs and sternum. The hollowness in the back is partly due to the fact that it is a compensating curve, but more probably attributable to the weakness of the trapezii, rhombodii, serati and latissimus dorsi muscles. The smallness of the waist is undoubtedly largely due to inheritance, and to the fact that the youth of the present day make very little use of the muscles of the waist and loins. Lateral curvature of the spine may be caused in many ways; by defective seats, bad positions in writing and drawing, standing for a long time on one leg, carrying weights, or using one arm more than another, etc.

Personally, I do not put particular stress upon these malformations, if they can be discovered in time. Nearly all of them can be corrected by judicious exercise. If allowed to increase, however, they invariably lead to spinal disease, or to some functional disturbance of the heart, stomach, or lungs, followed sooner or later by structural changes in these important organs.

Whatever the original cause of these physical defects may be, the immediate cause is a weakness of

the supporting muscles. After the body has once acquired a bias in the wrong direction many exercises otherwise beneficial are likely to be injurious. Among this number are horseback riding, rowing, lawn tennis and military drill. In order that you may see how the last named exercise can prove injurious to imperfectly developed boys I wish to call your attention to the elastic nature of muscular tissue. In order to be as brief as possible, I shall simply quote extracts from the experimental researches described by Rosenthal on this subject, in his admirable treatise on "Muscles and Nerves."

"A muscle dissected from the body is easily extended by a weight, and is extended in proportion as the weight attached is heavier." "The law of elasticity for inorganic bodies is: The tension is directly proportionate to the length of the body extended and to the amount of the extending weights; and that it is also proportionate in inverse ratio to the diameter of the extended body."

It has been found, however, that soft organic bodies, like muscles, are capable of far greater extension than are rigid, inorganic bodies, of equal length and diameter and under the application of equal weight. But the organic body also exhibits another peculiarity. If a weight is attached to a steel wire or some other similar body, the latter extends and retains its new length so long as the weight acts upon it; but as soon as the weight is removed the steel resumes its original length. It is not so in the case of inorganic bodies. When the weight is removed from an organic body it immediately becomes shorter, but does not entirely revert to its original length, it attains the latter very gradually and in the course of many hours. This phenomenon is known as the gradual extension of organic bodies. Muscle, in common with all soft bodies, exhibits another variation from the bearing of rigid bodies. That is, muscles are comparatively more extensible by light than by heavy weights. For instance, if the extension of a muscle when carrying ten grammes is five millimetres, when carrying a weight of twenty grammes it is not ten millimetres but only eight; when carrying thirty grammes it is only ten millimetres, and so on.

Another striking fact in connection with the physiology of the muscles has been brought out by the experiments of Weber. He has proven conclusively that muscle is further extended by the same weight when it is in a state of activity than when it is quiescent. Here again, we have the experiments of the physiological laboratory confirming the facts that have been brought under frequent observation in the gymnasium. We can now readily understand, how carrying the head forward would soon extend the muscles of the neck, how carrying a gun, though a light one, with the same arm for any length of time would gradually extend the muscles, and elongate the arm, droop the shoulder and crook the spine. This is, in fact, what military drill tends to do in all cases, and what it invariably does do when there is a bias in that direction, when the boy is tall and slender, or the muscles weak and flabby, and there is no effort made to correct the evil tendency.

If it is deemed advisable to make military drill a department of school instruction, I see no reason why a system of corrective exercises cannot be introduced as an accompaniment. If, on the other hand, military discipline alone is required, this can easily be applied to a system of class gymnastics or free exercises, as shown in the schools of Germany. After taking the most favorable view possible of military drill as a physical exercise we are led to conclude that its constrained positions, and closely localized movements do not afford the essential requisites for developing the muscles, and improving the respiration and circulation, and thereby improving the general health and condition of the system. We must further conclude that in case of any malformation, local weakness or constitutional debility, the drill tends, by its strain upon the nerves and prolonged tension on the muscles to increase the defects rather than to relieve them.

Finally, if the ultimate object of the drill was to prepare young men for the life and duties of a soldier, we should be forced to conclude that the drill itself would still be defective as a means of developing the chief requisites for men in that profession. This defect, we are pleased to state, is recognized by the great military nations of Europe and measures are taken to give all the recruits from three to twelve months' gymnastic training to develop them as *men* before they are expected to conform to the requirements of the soldier.

Prof. Hitchcock, of Amherst College, was introduced, and said that he had but few remarks to add to what had been said. The subject of physical training is a broad one, and concerns all the pupils in all our schools. It is not the introduction of all forms of training that is needed, but of chosen and carefully adapted forms of exercise for the conditions arising in the individuals before us. A library has been said to be not a collection of books, but a selection of books; and so the features of physical training may be very different in relation to the special requirements of each person.

The average college boy is a rather hard animal to drive, and is apt to kick over the traces. He must be catered to in the laying out of irksome duties, so as to get as much pleasure with the labor as possible. Military drill is objectionable on account of the character of the exercise, and on account of the discipline. If we desire to make a mere automaton of a boy, to deprive him of his thinking faculties, to make him dependent on orders and directions of others, then military drill is a good thing. Is this system the right one? I think not. Every boy is examined in all the branches of his curriculum, and his progress is in accordance to carefully prescribed directions. The same should be true in relation to physical training as is true in relation to mental or moral training. Boys should not be turned into gymnasium as calves are turned into a pasture, but should be carefully overlooked and guided, in order that the very means for their physical benefit may not become an agent of harm, or positive danger.

Gen. Hobart Moore, Instructor in Military Drill in the public schools of Boston, said that he had been much interested in the exhibition of the drill, and

not less amused. He would not be surprised to find curvature of the spine, or any other deformity resulting from the exercise of the drill as this was done before the audience. In actual practice, however, the evils represented and charged to the drill, are not observed. The statement has been made that the drill is confined to one side of the body. This is not so. The drill is made to embrace movements in exercise of both sides of the body, and the result of its employment is not a symmetrical development of the body of the boy. In addition to this, the actual practice of the drill is preceded by exercise in the "setting-up drill;" so that every possible source of defective or restricted exercise is removed.

Gen. Moore stated that he has pupils in Harvard and in other schools, and is constantly receiving most encouraging reports from them as to the influence of the drill-movements, and their relation to the bodily health and well-being of the pupils. In all the schools where the drill has been introduced, the boys are anxious to join, and often it is necessary to refuse permission to ambitious youths on account either of the small size of the applicants, or on account of their years. The parents of boys often come to the school to beg permission for their boys to join in the drill. An experience of twenty-five years in the practical teaching of the drill has convinced him that it is not only not harmful, but it is of positive advantage both in relation to the physical development of the boy's constitution, and also in relation to the training of the mental and moral nature. If this were not so, the drill would long ago have been discarded from the curriculum of our public schools. The striking rarity of accidents in the exercises of the drill is another feature to recommend it. In relation to the boys who are excused from drill, the fact is that more boys are exempted from drill on account of the effects produced by the abuse of gymnastics, than from all other causes put together. The boys themselves always want to drill. Objection to the drill does not come from those interested in it, the boys themselves, but from those who have no actual information on the subject, who are striving to upset an institution which the experience of years has found to be productive of great good, and to be free from serious harm.

DR. J. P. REYNOLDS said that he was at one time in Frankfort, and had observed the enthusiasm with which physical culture is there carried out. It is strange that in a city one-fifth the size of Boston, so much can be done and is done, and in our own city we have nothing. The experience of seventy years in Prussia should teach us something. We have retreated a long way toward barbarism, by our apathy in regard to the physical welfare of our children, and by neglecting them we lay the foundation for lives of feebleness and incapacity. Nobody who has observed the people of Germany can have failed to notice how much stronger and robust the population as a rule is in that country, than is the fact here. We are, as a nation, becoming effeminate and weak. The lessons of other countries are without influence upon our dulled faculties, and we have to look forward to an increased deterioration in the stock of health and vitality as the logical result of our stupidity. In Germany, even the son of the Emperor was not spared the entire *regime* of the course for physical training laid down for the preparation of recruits for the regular army. Every man must perform this duty to his physical system before he is considered capable of attempting the discharge of his duties towards his country.

DR. D. F. LINCOLN said that one important point had not been touched upon in the course of the present argument, and that is the fact that the girls need careful physical training as much as the boys, and that they have even less opportunity for exercise than have their more fortunate brothers. The people are not doing their whole duty by their children until they have given them the advantages of physical culture commensurate with their mental development.

DR. C. F. WITHINGTON, in closing the debate, spoke of the lateness of the hour, and said that he would not prolong the discussion, although there was much to be said. He observed that the exercises of this meeting had demonstrated that the simplest of apparatus could be made serviceable for a very comprehensive system of physical culture, and vastly improve upon the form of exercises now in vogue. There could be no question that the drill leaves much to be desired as a means of physical development, which could be supplied by the simpler and less expensive form of exercises connected with the courses of physical culture as shown at this meeting. When our school authorities have attended to the first requirements for physical culture of the whole body of pupils, male and female, then if there is any time or any money to spare let them think of supplementing the function of the State in the maintenance of a militia.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, September 2, 1886.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

INTUBATION OF THE LARYNX.

DR. E. E. MONTGOMERY exhibited a set of Dr. O'Dwyer's tubes, the gag, and the instruments for the insertion and removal of the tubes. He related the history of a case of laryngeal diphtheria in which they were successfully used to relieve asphyxia. In consequence of an over-dose of stimulant the tube was coughed out and had to be replaced, as the child could not have breathed without it. The doctor contrasted the difficulties of tracheotomy with the comparative ease of introduction of the tubes; and called attention to the want of success attending the former operation, as parents will not give an early consent to its performance. He had performed eleven tracheotomies before he had a single successful case, and as his first intubation case has been a success, he is strongly in favor of the new operation.

DR. M. PRICE reported a case of

REMOVAL OF THE OVARIES FOR UTERINE FIBROID.

The case is one of interstitial uterine fibroid; the

uterus being about the size of one at the third month of pregnancy, irregular in outline and nodular, and pelvic-bound. The ovaries were displaced backwards and incarcerated between the uterus and sacrum, making it difficult to remove them. The woman had been suffering four years, and a confirmed invalid during the the last one, unable to do any work. Her marital relations had been suspended for over a year, owing to the sickening pain attending any attempt at sexual intercourse. She had to walk with great care and lie on her stomach while resting or sleeping to prevent a throbbing and sickening pain in the pelvis. A rather exceptional and interesting feature of the case was the absence of profuse and irregular bleeding. He menses were irregular, scant and pale. Her chief suffering was from engorgement of and pressure upon the ovaries. All kinds of treatment had been persevered in for the last three years, and the patient grew worse. She demanded operative procedure for her relief, prefering the risk of death to her suffering. The ovaries were removed July 9, 1886. They were hypertrophied. They were found low down behind the uterus. They contained numerous pus pockets. The tubes were enlarged but did not contain pus. With the exception of a suture abscess she did perfectly well, and made a perfect recovery. She is now able to look after her domestic affairs and is free from pelvic pain and soreness. No examination of the condition of the uterus has been made since the operation.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Children of the Poor—Laparotomy for Gunshot Wound of Intestines—A New Infirmary for Children—New Jersey State Board of Health and Vital Statistics—Precautions Against Live-burial—False Death Certificates—Resignation of Dr. E. M. Moore.

During the past summer the city has done less than usual for the children of the poor, and consequently more work than ordinary has been thrown upon the private charities which interest themselves in the little ones. For the first time in a number of years the authorities failed to make the appropriation for the maintenance of a special summer corps of visiting physicians among the tenement-house population. This service has always been attended with very good results; one of its chief merits, perhaps, being the fact that incipient cases of diarrhœal disease are frequently detected in children whose parents might otherwise have unthinkingly allowed the trouble to go on until it would have been too late for medical aid to be of any service. In consequence of this neglect of the authorities, the Children's Aid Society, which has always maintained a corps of visiting physicians, has had to materially increase the number of these this season. The work of the Children's Aid Society's physicians, however, differed from that of those employed by the city in the fact that while the former only visit the tenement houses when summoned to see special cases of sickness among the children, the summer corps of the Health Department are required to visit the tenement districts systematically, and specially look up all cases of illness, prescribing for every sick child that they meet which is not already under medical treatment. The summer, however, has been a comparatively cool one, and as the death-rate among young children is always in a direct ratio to the heat when the latter is at all extreme, the infant mortality has not been as large as would otherwise have been the fact. Probably the largest number of deaths in the city occurred in the hot weather in the early part of July, when in one week there were reported 1111, of which no less than 683 occurred in children under five years of age.

The St. John's Guild has also been unusually active in its work, and has done a vast amount of good through its seaside nursery and the excursions of its floating hospital. It also has had a corps of summer physicians of its own this year, who have distributed a large number of tickets for these, and in consequence of the weather continuing warm in September, the trips of the floating hospital have been maintained later than usual. The expenses of each excursion amount to about $250.

Quite late in the season the Charity Organization Society also bestirred itself in behalf of the sick children, and through Mr. Fairchild, Acting Secretary of the Treasury—who was formerly its President—obtained permission of the War Department to erect a sanitary tent on Bedloe's Island (where the Bartholdi statue of liberty stands) for the purpose of affording a few hours of fresh air from time to time for mothers with feeble infants.

Dr. W. T. Bull, who added so largely to his reputation by his successful laparotomy in a case of perforating gunshot wound of the abdomen, in which the intestines were pierced in several places, has now again repeated this success. The operation was performed at the Chambers Street Branch of the New York Hospital, upon a sailor who was shot with a pistol, the ball entering the abdomen two inches below and somewhat to the left of the umbilicus. On opening the cavity it was found that the small intestine was perforated in two places, and that the sigmoid flexure of the colon and the sigmoid mesocolon were also wounded. Much blood had been poured out, and the operation, which was undertaken within two hours after the receipt of the injury, lasted about an hour and a half. The recovery was rapid and satisfactory.

A new Infirmary is now in course of construction at the Five Points House of Industry, the erection of which has been rendered necessary by the passage by the Legislature, at its last session, of the law requiring the isolation of all children affected with contagious eye diseases. The corner-stone was laid a short time since with appropriate services, and in his remarks the Superintendent, Mr. Wm. Y. Barnard, spoke particularly of the bad name which the spot had always borne, not only since Dickens had por-

trayed it in his "American Notes," but even from early colonial periods. He told how, in early Dutch history, it was the scene of the murder of Indians, and how, in 1700, a number of slaves, suspected of planning an insurrection, were executed and their bodies burned there. As the city grew to be a great metropolis, many a murder had been committed within its bounds, until it was hardly safe to pass through even by day. The man who, forty years ago, had predicted a scene like this, he said, would have been deemed a lunatic. The first effort to work a reform was made in 1850, by the Rev. L. M. Pease and his wife, who were suspected, by the parents of the children they wished to aid, of planning to kidnap them, and all other sorts of evil designs. But they persevered in the good work, and out of their small beginnings grew the present noble House of Industry. The new Infirmary will be four stories in height, 25 feet wide, and 80 feet deep.

The State Board of Health of New Jersey has just issued a series of instructions to the local boards throughout the State which are of considerable importance. The State Board is determined to enforce, as far as possible, a compliance on the part of all physicians within its jurisdiction with the statutes requiring the prompt registration of births, and requests that the local boards shall use their best endeavors to secure evidence against those neglecting to do this. It also requests that a proposed system, by which a full and accurate report may be obtained of all houses, their condition and surroundings, in which contagious disease exists, or has existed, with a view to securing more positive evidence concerning the ownership, and the enforcement of appropriate sanitary improvements. The State Board urges, in addition, the appointment of a competent veterinary surgeon whose duty it shall be to visit and inspect every dairy at least twice in each year; a measure which is of special importance at the present time in consequence of the increasing prevalence of pleuro-pneumonia among cattle.

Some of the philanthropic citizens of Brooklyn have conceived a plan by which the fear of being buried alive, which has always seemed to haunt the minds of certain individuals, may be done away with. It is proposed to incorporate a company for the purpose of erecting edifices in the suburbs, probably in the vicinity of the large cemeteries, for the temporary reception of dead bodies. The coffins will be left open, and the bodies will be allowed to remain until evidences of decomposition have become apparent, or, to use somewhat of a Hibernicism, until they show signs of life. Means will be provided that if a person in any of the coffins should be alive and recover consciousness, he could immediately communicate with an attendant and receive the proper aid; though the exact manner in which the supposed corpse shall make known the fact of his resuscitation has not as yet been decided upon. Whether the proposed project will be practically carried out or not appears at present to be somewhat problematical; though the legal gentleman who has been engaged to secure the incorporation of the company states that within the next six months the scheme will be in working order.

It has been reported that some of the physicians in the lower part of the city have of late been induced, either from a sense of pity, for a money consideration, or the sake of currying favor, to make out false certificates of death in the case of individuals dying of phthisis who were insured in cheap life insurance companies, which reserve the right to pay only half the amount of the policy to the beneficiary in the event of the person insured dying of consumption. It is to be hoped, for the honor of the profession, that the number of such medical men is exceedingly small; though that the thing actually occurs sometimes seems evident from the fact that a reputable physician, who reported to the Bureau of Vital Statistics the fact that he was asked by an undertaker to make out such a false death certificate, is said to have remarked to a reporter who called to see him in reference to the circumstance: "I can't afford to talk about this matter unless the newspapers are willing to pay me to move out of this neighborhood."

Very great regret is felt at the resignation from the State Board of Health of Dr. E. M. Moore, which has recently been announced. Dr. Moore, who is one of the leading medical men of the State and the country, and last autumn was elected President of the New York State Medical Association, was one of the original members of the Board, and his wise counsels in its deliberations, and active labors in its behalf, will be very severely missed in the future. It is stated that, in addition to the too great tax which it imposed upon his time, one reason for his resignation was that he felt the Board to be too much hampered in its proposed plans on account of the lack of funds which he considered essential for carrying out its legitimate and proper work. P. B. P.

CURABILITY OF PHTHISIS.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—During the past year several valuable articles and editorials have appeared in THE JOURNAL on this subject, and I desire to contribute the report of a case:

In 1852 Mr. John Tyler, of the firm of Williams & Tyler, merchant tailors of this place, consulted me for a cough which had been troubling him for nearly a year—latterly accompanied with hectic and night-sweats, and loss of flesh. Suspecting tubercle, I made a careful and very thorough physical exploration of his chest, and found incipient phthisis; a small cavity in the apex of his right lung. All the symptoms, rational and physical, warranted the diagnosis. My advice to Mr. Tyler was to give up his business at once, and go to Aiken, South Carolina, the St. Johns River, Florida, or San Antonio, Texas. His partner, being loth to give him up, persuaded him to go to Nashville and consult the late Dr. Jennings, whose age, experience, and reputation at that time placed him in the very fore-front of the profession in this State, if not in the entire South. Upon a thorough and very complete examination of his case, Dr. Jennings fully confirmed my diagnosis, and advised him to go to San Antonio, Texas, to buy him a wagon

and team, and work for a living, spending all the time possible in the open air.

He remained there eight years, and returned here a perfectly sound man, with full recovery of his average weight, and capacity for any amount of physical exertion without undue fatigue or shortness of breath. The stethoscope revealed a flat dulness, characteristic of chalky metamorphosis. Purchasing a farm in the country, he led an active life for twenty years.

In 1880, Mr. T. came into my office to be examined for membership in the Order of the Knights of Honor by my partner, Dr. B. J. Harlan, who is examining surgeon to the Order. I said nothing to Dr. Harlan about Mr. Tyler's medical history, as detailed above, but curiously awaited events. Dr. Harlan having made his usual examination, seemed not satisfied, but requested him to accompany him into an inner room, and strip himself for a more thorough and critical examination. Upon completing this he requested him to return next morning, as he was not quite ready to recommend him for membership. As soon as he left our office, Dr. Harlan explained to me that his difficulty in the case was an unaccountable opaqueness, so to speak, *in the top of his right lung*, and that if he had any history of phthisis, at any time, he would not hesitate to pronounce it a *dry cavity*.

I immediately recounted the previous history of the applicant, as imperfectly detailed above, he expressed himself perfectly satisfied, filled up his application, fully recommending him for membership. He was duly elected, and stands to-day a first-class risk of the Order. Permit me to say in conclusion, in all candor, that if this is really, as it seems to be, a case of *cured phthisis*, it is the only one that I am willing to report as such, out of a very large mixed practice of forty years. Yours very truly,

J. M. Towler, A.M., M.D.

Columbia, Tenn., July 16, 1886.

NEW INSTRUMENTS.

NEW IMPROVED COMBINED TROCAR AND CANULA AND ASPIRATING NEEDLE.

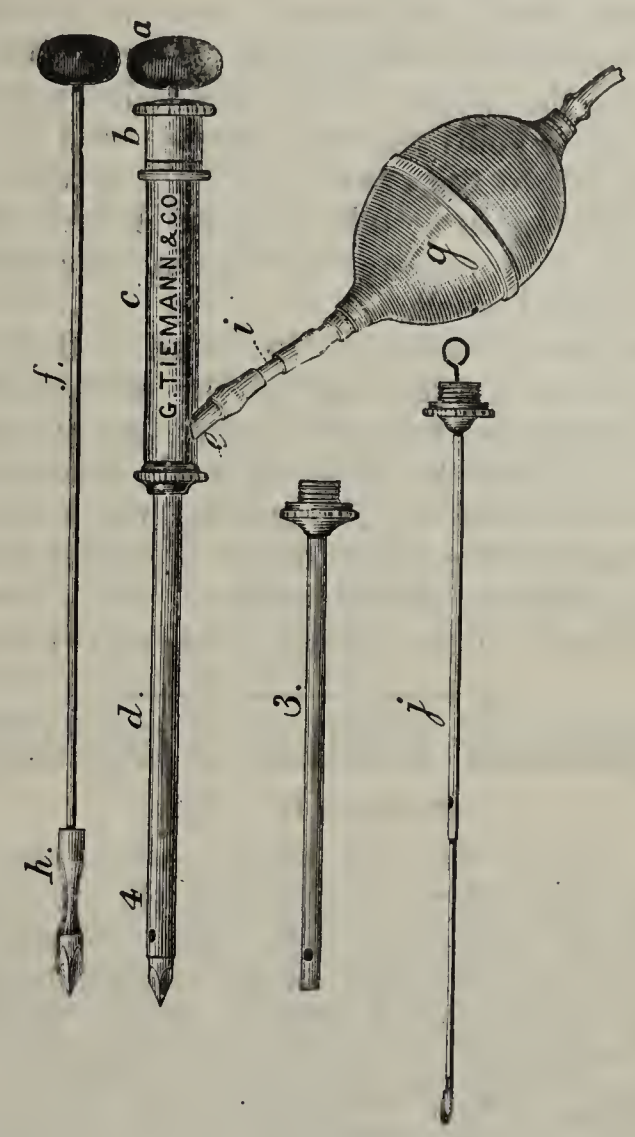
BY H. LANDIS GETZ, M.D.,

OF MARSHALLTOWN, IOWA.

I take pleasure in presenting and recommending to the profession a New *Improved* Combined Trocar and Canula and Aspirating Needle. The object of this instrument is to overcome the disadvantages of the common trocar and canula and common aspirating needle and yet to preserve the advantages and applicabilities of both, and at the same time combining the instruments in a neat and compact manner and at reasonable expense.

The advantages of the instrument will readily suggest themselves, and I will therefore give only a brief description and a few suggestions concerning its application.

With the instrument for general use there are four sizes of canulæ—the smallest of which is a part of the aspirating needle and is not larger in diameter than a common hypodermic needle or small, old style, aspirating needle—in which the cutting point cannot be removed after having entered the cavity. The other three sizes of canula are used, in general, as required by the varying cavities to be evacuated.



A, button which screws on trocar rod F, which is used as a handle and also prevents the trocar from passing too far through the canula. To rod F are attached the three largest sizes of trocar tips. H, one of the tips as screwed on the rod F. C, handle portion of canula to which are attached by screw-joint the larger sizes of canula and the smaller or aspirating size J. E represents the outlet from handle portion of canula. I, a short piece of glass tubing through which fluid is seen to pass. G, a reversible bulb which may be used for exhausting or injecting. B, cap attaching to C, by screw joint into which is placed a small rubber disk, cut from rubber bandage material, through which pass the exploring trocar, or the larger trocar rod. 4, one of the openings, of which there are several in the end of each canula, to allow the fluid to pass, which will aid in determining the entrance of the sac. J, exploring canula with trocar needle passed through it. This needle is of the same length as the parts J and H combined, and when J is used the needle is entered in the opening in B, passed through the small rubber disk and then passed on through C and J until the needle point projects about ⅓ inch beyond the canula.

The exploring trocar being too small in calibre to admit of grooving or perforating it, is flattened upon one side in such a manner that when it is passed through the exploring canula a groove is formed between the needle and canula.

To use the instrument for exploring place imperforate rubber disc in cap B and screw tightly on to C and attach canula F to C. Now enter exploring trocar at opening in B and pass it through until the point emerges about ⅛ inch at end of canula F. The instrument is now ready for use. After having entered the sac withdraw the needle until the point of it has passed the outlet E. The bulb G or an aspirating pump may or may not be attached to E as pleases the operator.

The exploration being completed and a more rapid evacuation being desired, the instrument is withdrawn, the needle removed and the exploring canula J de-

tached from C. J without trocar tip attached is now passed through opening of same rubber disc in B, and passed through until A comes in contact with B. Now screw on J such sized trocar tip as you desire and slip over a corresponding size of canula and screw the same on to C.

The instrument may now be used in the same manner as when used for exploring. The sac having been evacuated, the trocar point is pushed forward into the canula just beyond the attachment with C—the instrument still in the cavity, the bulb is now reversed, the trocar is again withdrawn past E and the cavity injected. The manner of again evacuating will readily suggest itself.

Should it be desirable to leave a drainage-tube within the sac, detach the handle portion of canula C from the canula proper, leaving the canula still in the sac, and pass the tube through canula into sac and now withdraw canula, leaving the tube dipping into the sac. The instrument is novel, neat, compact, inexpensive, and complete.

204 E. Main St., Marshalltown, Iowa, Sept. 1, 1886.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

AMERICAN PUBLIC HEALTH ASSOCIATION—RAILROAD RATES.—The fare from Chicago to Toronto is $14. Delegates to the Convention of the American Public Health Association who pay full fare in going to Toronto will be returned from Toronto at one-third fare. Please be particular to take a certificate from the agent of whom you purchase your ticket from Chicago to Toronto, which certificate should be signed by the Secretary of your meeting at Toronto, certifying that you had been in attendance upon the convention. Upon the presentation of the certificate, thus certified to, to the ticket agent at Toronto, he will furnish you with a ticket for the return journey at one-third fare. Geo. H. Daniels, 205 La Salle St., Chicago.

THE VOLTA PRIZE.—*Le Progrès Médical* (Aug. 7) reports that the French Minister of Education has just fixed the date of competition for the Volta Prize. It is of the value of £2000, and was instituted by a decree dated June 11, 1882, in favor of the author of a discovery which shall render electricity economically useful in one of the following applications: As a source of heat, of light, of chemical action, of mechanical power as a means of transmission of despatches, or in the treatment of disease. The competition will remain open to June 30, 1887, and the prize will be awarded the following December. Scientists of all nations may compete. A commission, nominated by the Minister of Education, will be charged with the examination of the discovery specified by each competitor, with a view to determine if it fulfil the required conditions.—*Lancet*, August 14, 1886.

THE INTERNATIONAL MEDICAL CONGRESS to be held at Washington, in September, 1887, promises to be a great success. It is under the patronage of the President of the United States, the Secretary of State, the President of the Senate, and the Speaker of the House of Representatives. The president elect is Dr. N. S. Davis, Professor of the Principles and Practice of Medicine in Chicago College. The list of vice-presidents includes the following distinguished names: Mr. Richard Quain, Professor Annandale, Professor Burdon-Sanderson, Dr. Ricord of Paris, Grant Bey, Dr. Klein, Dr. Dujardin-Beaumetz, of Paris; Dr. Murrell, Professor von Hebra, of Vienna; Professor Unna, of Hamburg; Dr. C. D. F. Phillips, Professor von Mosengeil, of Bonn; Professor Sayre, of New York; the Baron H. Larrey, of Paris; Professor T. R. Fraser, of Edinburgh; the President of the American Medical Association, the Surgeon-General of the United States Army, and the Surgeon-General of the United States Navy.—*The Daily Telegraph*, (London.) August 20, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 11, 1886, TO SEPTEMBER 17, 1886.

First Lieut. Philip G. Wales, Asst. Surgeon, resignation accepted by the President, to take effect Nov. 5, 1886. (S. O. 212, A. G. O., Sept. 11, 1886.)

First Lieut. F. V. Walker, Asst. Surgeon, assigned to temporary duty at Ft. Adams, R. I. (S. O. 131, Div. of the Atlantic, Sept. 8, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING SEPTEMBER 18, 1886.

Simons, M. H., P. A. Surgeon; E. Norfleet, P. A. Surgeon, detached from the "Alert" and placed on waiting orders.

Bogert, E. S., Medical Inspector, ordered to Navy Yard, New York, Sept. 28, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED SEPTEMBER 18, 1886.

Austin, H. W., Surgeon, granted leave of absence for thirty days. Sept. 16, 1886.

Goldsborough, C. B., Surgeon, promoted and appointed Surgeon from Oct. 1, 1886. Sept. 9, 1886.

Yemans, H. W., P. A. Surgeon, granted leave of absence for ten days. Sept. 16, 1886.

Bevan, A. D., P. A. Surgeon, promoted and appointed P. A. Surgeon from Sept. 1, 1886. Sept. 7, 1886. Granted leave of absence for thirty days. Sept. 7, 1886.

Glennan, A. H., P. A. Surgeon, promoted and appointed P. A. Surgeon from Sept. 1, 1886. Sept. 7, 1886.

Norman, Seaton, Asst. Surgeon, to proceed to Vineyard Haven, Mass., for temporary duty. Sept. 9, 1886.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, OCTOBER 2, 1886. No. 14.

ADDRESSES.

ADDRESS IN DERMATOLOGY.[1]

BY HENRY J. REYNOLDS, M.D.,

CHAIRMAN OF THE SECTION ON DERMATOLOGY ILLINOIS STATE MEDICAL SOCIETY; PROFESSOR OF DERMATOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO; PROFESSOR OF SKIN AND GENITO-URINARY DISEASES, CHICAGO POLICLINIC; DERMATOLOGIST TO THE WEST SIDE FREE DISPENSARY; GENITO-URINARY SURGEON TO THE HOSPITAL OF THE COLLEGE OF PHYSICIANS AND SURGEONS, OF CHICAGO, ETC.

In obedience to the usual custom my remarks will be confined to what has appeared in the light of progress, advancement, and new discoveries in dermatology during the past year. It is difficult, if not impossible to determine in a year's time whether certain advances and discoveries in this department, as in other departments of medical science, are really such or are only so-called. It would not, however, be speaking in very flattering terms of the intelligence of the writers of the vast array of literature that is yearly presented to the medical profession, nor to those who eagerly peruse the same, were we to assume that only a little in the direction of advancement had been presented. While, however, but comparatively little, perhaps, in this department has been presented during the past year that can in every respect be regarded as real advancement, yet very many important clinical facts and experiences have been presented, which, in addition to establishing new theories, serve the equally important purpose of tending to show the fallacy of old ones. Therefore, not presuming to present all that has appeared on record in this light during the past year, I shall ask your indulgence while I enumerate such as have come to my notice or been deemed worthy of mention, together with some personal remarks regarding the same, and leave the matter, as regards the determination of the truthfulness and value of the so-called advances, for further investigation and your wise judgment to decide.

NOMENCLATURE AND CLASSIFICATION.

At the annual meeting of the American Medical Association two years ago Dr. Duhring read a paper on "Dermatitis Herpetiformis."[1] Under this head the author embraces the *impetigo herpetiformis* of Hebra, that affection termed by some authorities *herpes gestationis*, and a number of other rare conditions described by various writers under different names. He subdivides the disease into the erythematous, vesicular, bullous, and pustular varieties, according to the symptoms present. The propriety of thus grouping into one disease these various manifestations is still a matter of discussion among those making a special study of skin disease; and although the name and classification Dr. Duhring proposes are generally received with favor, the question as to whether these various conditions can justly be regarded as different manifestations of an individual disease remains yet to be settled.

A few other insignificant changes have been made in the classification of the American Dermatological Association.

ACNE.

In a paper read at the eighth annual meeting of the American Dermatological Association,[2] the use of sounds in the male urethra, as a supplementary measure in the treatment of acne, was proposed by Dr. Sherwell, of Brooklyn, who claimed the cure of two cases by this method. In support of the efficacy of this procedure in acne, may be found, in a paper read at the ninth annual meeting of the same Society,[3] by Dr. LeGrand N. Denslow, of St. Paul, other cases of acne reported, in which the same treatment was resorted to with apparent benefit. Dr. Denslow also reports, in the same paper, a case of general alopecia apparently cured by the same treatment. It is an almost universally conceded fact that many other remote troubles may be brought about by reflex urethral irritation; and as there exists a particularly intimate relation between the functions of the genital organs and the sebaceous glands, it seems more than probable, though I have had no experience in the same myself, that the procedure is a justifiable one, and in certain cases of acne and other sebaceous disorders, when the prostatic or other portions of the urethra are over-sensitive, will be found productive of beneficial results.

In this connection I may mention a line of treatment which I have found preferable to any other in certain forms of acne, and which was published about a year ago.[4] The principle of the treatment so far as I am aware, has not been referred to by other writers. Though applicable to all forms of acne it is more particularly useful in those forms where the lesions become deep and nodular, with little tendency

[1] Read at the Thirty-Sixth Annual Meeting of the Illinois State Medical Society.

[1] JOUR. AMER. MED. ASSOC., Aug. 30, 1884.

[2] Jour Cutan. and Vener. Dis., Nov., 1884.

[3] Medical Record, Nov. 7, 1885.

[4] Western Med. Rep., vol. vii, p. 20.

to pustulation on the surface, and described by various authors as acne indurata, acne cachecticorum, etc. In this condition the lesions, though apparently papular, are situated deep in or underneath the skin, and will invariably be found to contain, in their centre, pus; which, instead of coming rapidly to an inflammatory surface, remains the same almost indefinitely, with a tendency, rather, to burrow deeper. I am in the habit of lancing these lesions deeply with a Graefe's cataract knife, and invariably find pus. Now if these lesions were left, after being lanced and evacuated of the pus, they would immediately heal over on the surface and leave the pyogenic nidus to continue its work as before. I therefore, after lancing, pass a probe dipped in carbolic acid to the bottom of the incision, and then fill the whole from the bottom to the top with a piece of absorbent cotton, and allow it to heal from the bottom. In this way no lesion will fail to entirely disappear, leaving only an almost invisible scar. New lesions will of course now and then appear, which may be treated in the same way. Other measures will be kept up as deemed necessary in the meantime.

CURE OF LEPROSY.

Fox, of New York,[5] suggests the possible if not probable cure of leprosy when the proper *moral effect* can be brought to bear upon those patients; and reports in support of the same, the apparent cure of a case, wherein he attributes it largely to this therapeutic measure. He aptly says: "I need not dwell upon the well-known influence of the mind upon the condition of the body; no one doubts it, though few appreciate it." True it is that the moral effect upon patients suffering from this malady is greater in its depressing tendency, perhaps, than in any other disease, banished as they are from society and imprisoned for life, as it were, with the hope only of a most miserable existence and a lingering death.

PIGMENTARY SYPHILIDE.

Dr. R. W. Taylor, of New York, reports a case with illustration,[6] in support of the claim originally made by Hardy, that we may have, though rare, a pigmentary discoloration of the skin due to syphilis, which differs, and is to be diagnosticated, from chloasma, tinea versicolor, ordinary vitiligo or leucoderma, and all pigmentations found as relics of other eruptions. He concludes, as the result of his observation, that the unequal distribution of pigment which syphilis may cause may be either in the form of hyperpigmented spots, deficiently pigmented or leucodermatous spots, or the two combined. I may add to the above the report of a most typical case of the same that recently came under my own observation. The patient was a white female in the Cook County Hospital, Chicago, to whom my attention was called by my colleague, Prof. S. A. McWilliams, the attending physician. There was an unmistakable history of syphilis. Large patches almost as dark as the negro were to be found on various parts of the body, which gradually faded away to a surface almost if not quite destitute of pigment.

[5] Quarterly Bulletin, N. Y., Post-Graduate Medical School, 1885.
[6] Jour. Cutan. and Vener. Diseases, April, 1885.

CARBUNCLE.

At the annual meeting of the American Medical Association held at New Orleans, 1885, Dr. Bulkley read a paper on "The Treatment of Carbuncle Without Incision,"[7] in which he substituted for the old plan of crucial incision and hot poultices an ointment containing ergot and oxide of zinc locally, and sulphide of calcium and saline laxative with iron internally. By this method he claimed a shorter duration, less pain, and less scarring. For the same malady Dr. James F. Hibberd, of Richmond, Indiana, in a paper read at the Indiana State Medical Society, 1885,[8] advocated the local use of oleate of morphia applied with gentle friction every three hours. By this treatment Dr. Hibberd's cases, if not aborted, did not last over about a week and were attended with only a minimum of pain and soreness.

URTICARIA.

Lassar[9] cuts short the duration, and reduces the frequency, of violent attacks of urticaria by 24-grain doses of salicylate of sodium, repeated every two hours until three doses are taken. It is certainly well worthy of a trial, as the trouble is undoubtedly at times a very stubborn, not to say serious one.

RINGWORM OF THE SCALP.

Alder Smith[10] recommends, as a parasiticide in ringworm of the scalp, chrysarobin dissolved in chloroform—7 grains to the ounce. The chloroform, in addition to serving as a vehicle, dissolves the fatty matters out of the follicles and thereby facilitates the penetration of the chrysarobin.

A. J. Harrison[11] applies first a mixture of ½ drachm iodide of potassium to 1 ounce of liq. potassæ. When this has penetrated he applies a solution composed of 1 ounce of sweet spts. of nitre and 3 grains of bichloride of mercury. His theory is that the liquor potassæ softens the hair-bulbs and hairs and thereby allows the iodide of potassium to be conveyed to the bottom of the follicles. Then, when the mixture of nitre and bichloride of mercury is applied (the nitre being used merely because it forms a thin mobile menstruum) the mercury comes in contact with the iodide of potassium in the bottom of the follicle and the important chemical change which is there set up—the formation of the biniodide of mercury—he regards as very important and beneficial.

CHRYSAROBIN INTERNALLY.

The internal administration of chrysarobin for various diseases of the skin was suggested by Stocquart about two years ago.[12] Since that time his success has not been so great with the remedy, but he still speaks highly of its use in eczema and impetigo of children, stating that it decreases the blood supply to the part, thereby reducing the redness and secretion.[13] In regard to the curative properties of this remedy, administered internally, it may be stated

[7] JOUR. AMER. MED. ASSOC., vol. iv, p. 542.
[8] Indiana Medical Jour., May, 1885.
[9] Monatshefte für prakt. Dermatologie (Abst. West. Med. Rep., vol. vii, p. 246).
[10] Brit. Med. Jour. (Abst. West. Med. Rep., vol. vii, p. 60).
[11] Brit. Med. Jour., Sept. 5, 1885.
[12] Annales de Dermatologie et de Syph., Jan., 1884.
[13] Monatshefte für prakt. Dermatologie, Jan., 1886.

that it is a generally conceded fact that remedies which have any action upon the alimentary canal, usually diminish the supply of blood to other parts. This I have found to be particularly true in regard to cutaneous hyperæmia. It is my usual custom, therefore, when this condition exists, as is usually the case in eczema, to act upon the alimentary canal, giving usually a saline laxative. For the purpose of demonstration I have frequently in dispensary practice cured cases of eczema by this method alone, restricting of course, at the same time, the patient from scratching the parts. I may add, therefore, that from both theoretical and practical reasons I do not regard the drug as having any special merits as an internal remedy; nor perhaps the laxative above referred to over many other laxative or purgative remedies having an irritant effect upon the alimentary canal.

COCAINE.

Brief mention of the comparatively new and much talked of drug, cocaine, may perhaps be tolerated. As common sense should teach any intelligent person, this drug, if useful as a local anæsthetic in one location, must necessarily be so in any other where it can be properly applied and sufficiently absorbed. It, however, is not well absorbed by the skin, and therefore not as useful as in certain other localities. To control the itching in eczema, if there be sufficient abrasion to favor its absorption, it will be found useful in a strong solution; also in pruritus ani. I have not found it to be of much service in relieving the pain due to the removal from the face of superfluous hairs by electrolysis.

LITERATURE.

Of the new publications that have appeared during the past year, may be mentioned the "Photographic Illustrations of Skin Diseases—Syphilitic and Non-Syphilitic," by Geo. H. Fox; also, by the same author, "The Use of Electricity in the Removal of Superfluous Hair and in the Treatment of Various Facial Blemishes;" "A Manual of Dermatology," by A. R. Robinson, of New York; "Acne and Its Treatment," by Bulkley; "Practical Notes on the Treatment of Skin Diseases," of which the first two numbers, on "Diseases of the Perspiratory and Sebaceous Glands," and "Eczema," respectively, have appeared, by Geo. H. Rohé, of Baltimore; also a valuable Handbook of Diseases of the Skin," by Ziemssen.

ORIGINAL ARTICLES.

INTRA-VENOUS INJECTION OF SALINE SOLUTION IN COLLAPSE FOLLOWING HÆMORRHAGE.[1]

BY CHARLES WESLEY ROOK, M.D.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, QUINCY COLLEGE OF MEDICINE, QUINCY, ILL.

In order that our profession may know of the benefit to be derived from the intra-venous injection of salt solution and its preference to either the transfusion of blood or the intra-venous injection of milk in the collapse of hæmorrhage, the following case is related;

On November 30, 1885, the writer, assisted by Drs. Bassett and Irwin, of Quincy, and King, of Payson, Ill., removed from the mouth of Mr. Thomas Seals, age 50 years, what was diagnosticated as a malignant epulis, springing from the left lower maxillary bone and filling the oral cavity. After the operation the growth was examined microscopically by Dr. Gilmer, of Quincy, who pronounced it a round-celled sarcoma. The shock of the operation was very slight.

Within two weeks the growth was seen to be recurring, but as Mr. S. was rapidly regaining strength it was thought safer to delay for a few days the second operation. December 19, 1885, just twenty-one days from date of operation, I was summoned to the house of Mr. S. In company with my brother, Mr. J. H. Rook, I answered the call, and found bright arterial blood streaming from the mouth of my patient. Rupture of the facial or lingual artery was suspected, but examination revealed no ruptured vessel, only a rapid oozing from the sarcomatous tissue. A cloth saturated with Monsel's solution of iron was thoroughly applied to the bleeding surface, which arrested the hæmorrhage. At the moment the hæmorrhage was checked Mr. S. fainted. He was laid upon the floor and assistance was sent for. Looking at my patient, who was in the unconscious and pulseless condition of extreme collapse, I determined to attempt his resuscitation by the intra-venous injection of a dilute saline solution. Asking for a bowl of warm water and some table salt, I proceeded to ligate the left arm. After waiting a few moments, the veins not distending sufficiently to show their location, the right arm was ligated, patient turned to his right side, where in a few moments the median basilic vein was seen. At this moment Dr. Lee, of Quincy, came in, and readily seconded my efforts. The skin was incised, a grooved director passed under the vein, into which was introduced a small trochar and about which was passed a catgut ligature to prevent regurgitation. I then took from my case a Mattson's rubber syringe, removed the nozzle with metal piece attached, filled the syringe with the warm water made slightly saline to taste, slipped the end of the rubber tube on the canula, and slowly injected the warm saline solution until a good radial pulse was produced and the patient returned to consciousness. The canula was then removed, the vein occluded by tightening the ligature, and the patient lifted from the floor to his bed, where in a few moments he was attacked with a severe chill. He was quickly surrounded with bottles of hot water, and in twenty minutes was resting comfortably. He experienced great thirst for some hours, during which he drank freely of cold water and milk, which were occasionally rejected by the stomach. No alcoholics were administered.

Notwithstanding the great loss of blood, our patient was able to undergo, four days later, his second operation, which was performed by Dr. Byrd, assisted by Drs. Lee, Irwin and myself. Since the date of

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

the second, seven subsequent operations have been performed, the last being on April 27, 1886. Mr. S., though much enfeebled by the continued recurrence of the disease, is yet able to take much outdoor exercise. The quantity of blood lost at the time of the hæmorrhage was found by measurement to be one hundred and ninety ounces, while the quantity of salt solution injected was only eighty ounces.

Having seen and treated only the case narrated, does not perhaps entitle me to the privilege of formulating rules for the guidance of others, yet a little argument in favor of the method may not be without interest. It is a known fact that the blood corpuscles multiply very rapidly, and all that is needed in a case requiring transfusion is the injection of a suitable fluid in which the corpuscles can multiply. Such a fluid is the dilute saline solution, which will also prevent the remaining blood from coagulating. The dangers and difficulties attending the execution of other methods, for which the salt solution may be substituted, are apparent to all. In the process of immediate transfusion advised by Aveling we are met by the difficulty of finding a willing and suitable donor, the necessity of having a special transfusion instrument, and the danger of carrying coagulated fibrine into the circulation of the recipient. If the method of injecting defibrinated blood be employed, a suitable donor must be found, after which valuable time is consumed in extracting the blood and removing its fibrine. When employing milk for intravenous injection we are rightly advised to use only the warm freshly-drawn milk, a condition of that fluid not easily obtained in our cities.

In conclusion, I ask a trial of the salt solution, for I am convinced that it is as efficient, more practical, and safer than the transfusion of blood or injection of milk.

VENOUS BLOOD TUMORS OF THE CRANIUM

in Communication with the Intra-Cranial Venous Circulation, Especially the Sinuses of the Dura Mater.

BY WM. M. MASTIN, M.D.,
OF MOBILE, ALA.

(Concluded from page 344.)

PATHOLOGICAL ANATOMY.

Fortunately the collected cases represent a goodly number of authentic post-mortem sections, together with valuable surgical examinations; and consequently, these furnish pathological data of a character sufficiently definite to enable, it is believed, the formulation of rational and decisive conclusions—conclusions which are also added to and strengthened by marked symptoms and conditions, as manifested by numerous clearly analyzed cases without post-mortem demonstration.

A rapid rehearsal of the anatomical facts collectively, before entering into the examination and consideration of individual pathological points, seems advisable.

Moreau's Case.—There was a venous varix formed of congeries of veins, terminating in enlarged and dilated vessels which passed, by means of three perforations in the frontal bone, into the longitudinal sinus. For a large extent around these osseous openings the dura mater was inflamed and covered with pus,—a phlebitis and meningitis the result of the previous operative treatment. This is an example of venous varicose tumor.

Michaud's Case.—Two erectile growths, one over brow and eye-lid, the other located on the head. They were composed of a cavernous tissue, under the seat of which the bone was perforated by a multitude of little apertures giving passage to the veins coming from these structures in their course to the superior longitudinal sinus.

Foucteau's Case.—Occupying the site of the posterior fontanelle was a blood tumor which communicated directly with the superior longitudinal sinus through a single opening in the fontanelle the size of the little finger, by means of a tubular pedicle of which the cyst appeared to be an expansion. The tumor was composed of two principal cysts with a small accessory pouch, which were lined by a vascular serous membrane. This serous membrane was of the same character as, and continuous with, that of the cerebral sinus through the above-mentioned pedicle. Thus it would appear that this was a blood-cyst formed by a hernia of the sinus through the unclosed posterior fontanelle, in which only the serous coat of the sinus was recognizable by the eye alone.

Demme's Case.—Located on the top of the head (in the middle of the sagittal suture) was a tumor composed of a pouch the interior walls of which were covered by fibrinous laminations, of different color and consistence, according to their respective ages, as in a true aneurismal sac. In the coagulum in contact with the bottom of this pouch was a funnel-shaped depression which proved to be the entrance to an opening leading to the cranium. The superior longitudinal sinus was distended and filled with a coagulum, and was considerably dilated at a point corresponding to the external tumor with which free communication was demonstrable. The external wall of the cyst consisted of the normal scalp, but the other layers were composed, very evidently, of the sinus walls protruding through the osseous opening. Traction upon the tumor showed that the opening in its base consisted of a tubular pedicle connecting its cavity with the sinus. The pericranium did not enter into the formation of the cyst coverings, but was intimately attached to the circumference of the skull opening and the pedicle, showing that it had either ruptured or been absorbed. The cranial tissue was thinned throughout the space occupied by the tumor, rather transparent, and in a state of rarefaction. The walls of the sinus were thickened, especially the fibrous elements, but otherwise little altered. The microscope was employed in the examination. This presents a case of true ectasia of the superior longitudinal sinus through the anterior fontanelle, probably the anterior angle.

Acland's Case.—The growth was a venous capsule communicating through a foramen in the protuberantia occipitalis, by means of a fibrous tube, with the

Torcular Herophili, thus putting the cyst in communication with the intra-cranial venous circulation. Brain greatly enlarged, and anterior horn of one lateral ventricle distended with serum (hydrocephalus). Here is shown a circumscribed venous varix of an emissary vein (emissarium occipitale) passing to the Torcular.

Bruns' Case.—Located over posterior fontanelle, with a thick pediculated base. Surgical examination after strangulation and removal of the growth demonstrated the structure of the formation to be a mass of areolar tissue containing a bunch of greatly thickened veins, in which were several spherical enlargements or dilatations. Beneath the cicatrizing ulcer left after removal of the tumor the underlying fontanelle was plainly felt. This is another instance of varicose emissary vein or veins passing to the sinus through the posterior fontanelle or below it.

Busch's Case.—A large fluctuating tumor, occupying the superior occipital region, including the small fontanelle. Contained a quantity of dark, viscous blood. The fluid situated between bones of skull and pericranium, and was in communication with the sinus. Several vessels extending from the tumor to superior longitudinal sinus were divided by the post-mortem incision. Character of tumor not definite, but possibly a venous varix.

Flint's Case.—A tumor in occiput. Contained venous blood, and communicated with superior longitudinal sinus. Probably an example of ectasia of the sinus.

Jacobi's Case (Morbid Specimen).—A large cyst filled with coagulum located on occiput. Perforating the os occïpïtis was a large and long opening or canal through which the sinus protruded as a hernia under the scalp. The question arises, Was this not a varicose occipital emissary vein traversing its normal but enlarged foramen? However, it is received by several authors as a true hernia of the sinus, and, with the unsatisfactory data at hand, I must now also accept it as such.

Melchiori's Case.—Located on left parietal bone. Tumor composed of a net-work of empty veins ranging in size from a thread to a pigeon-quill, freely intercommunicating, and finally terminating in a common trunk about the thickness of a goose-quill. This trunk passed through the galea aponeurotica capitis, and piercing the skull at the lower and posterior edge of the parietal bone, emptied into the transverse sinus where this canal lies on inner surface of temporal bone. There was meningitis, and all the sinuses were filled with partially suppurating clots, although without disease of their walls. This was a case of varix of the external cranial veins communicating with the sinus.

Andrews' Case.—On removal of the scalp a number of enlarged and distended veins were seen about middle of the occipital bone. Just below the external protuberance was found a depression in the bone of one-third inch in diameter and one-fourth inch in depth, and covering which was a membrane that appeared to be formed of thickened walls of a distended vein, and upon puncturing this venous blood escaped. The depression was then found to be a complete perforation, about the size of a crow-quill, which led into the sinus. There were tubercular deposits in brain, and serous effusion into both membrane and ventricular cavities. This was a case of circumscribed varix of the emissarium occipitale.

Pott's Case.—A blood collection on top of head. Operation disclosed depressed fracture with a sharp fragment piercing superior longitudinal sinus.

Hutin's Case.—Blood pouch on right frontal region, communicating, through an old traumatic bone perforation, with the superior longitudinal sinus. Osséous atrophy also evidenced.

Hutin's Case.—Fluctuating blood pouch on right side of summit of head, between osseous vault and pericranium. Perforation of under and right side of longitudinal sinus by a thick bone splinter, thus placing the blood sac in communication with the sinus. Another blood collection internally between dura and skull, which also communicated with both sinus and external tumor.

The individual points which call for consideration are these: I. The general character of the tumor; II. The anatomical relations of the tumor, including the nature of the tissues composing and limiting it; III. The contents; IV. The method of communication with the intra-cranial circulation.

I. *The General Character of the Tumor.*—This tumor may be defined as, an indolent swelling external to the skull, in the form either of (i) a cyst—single or compound—or of (ii) a varicose or an erectile growth, containing venous blood, and communicating, directly or indirectly, by one or many skull perforations—normal or pathological—with the intracranial venous circulation.

The indolent nature of the growth is too fully and prominently shown in the detailed history of the cases to necessitate further notice,—the only inconveniences complained of in the large majority of instances being subjective, or due to the annoyances of its particular location.

(i). The pouch—or cyst—variety is, as its name implies, composed of a pouch or sac variously formed, and the character of this formation being dependent upon the cause in operation. It can be asserted, therefore, from an etiological standpoint, and largely sustained by necropsic evidences that this form is encountered in circumscribed dilatation of an emissary vein (fusiform); in ectasia or hernia of the sinus and in dilatation of a diploic vessel (sacciform); in cranial perforation the result of a rarefying osteitis, and in the greater number of cases produced by direct injury, including both skull fracture and rupture of an emissary vessel (false). These features mark this variety as being closely allied to aneurismal formations in general, and whereas these characters are met with in the majority of cases, at the same time they cannot be considered so characteristic of this division, as was formerly my opinion.

Several post-mortem dissections, with every physical indication in many other cases without the conclusive proof of autopsic examinations, furnish sufficient demonstration for these conclusions.

(ii). In the other form—the varicose variety—the tumor is composed of tortuous and varicose veins

(chiefly the emissaria Santorini) with numerous dilatations, or, occasionally, of a structure resembling true erectile or cavernous tissue (Michaud's case). These varicose formations may be in both fine and gross bundles held together by a meshwork of areolar tissue, and consisting of simple tortuous veins alone or combined with dilatations. Many cases in all three of the classes, the congenital, spontaneous and traumatic groups, illustrate this variety.

II. *The Anatomical Relations of the Tumor.*—Taking the coverings of the cranium in their order from without inwards, I find the anatomical location of these formations may be, (a) between the integument and the cranial aponeurosis; (b) between the fibro-muscular layer (aponeurosis) and the pericranium; (c) between the pericranium and the bone; and (d) occasionally extending internally between the skull and the dura mater.

These conclusions, which were reached in my previous paper, were then based upon the recognition chiefly of one principal variety of this formation, namely, the *diffused*, where the effused blood escapes beneath the scalp tissues; and even with a more extended knowledge of the etiology and pathology, including the wider and more comprehensive classification now given to the lesion, these relational divisions are, in the main, still appropriate.

(a) The situation of the growth between the skin and the epicranial aponeurosis, although not determined by the positive evidence of actual dissection, can be considered as, at least, probable, especially in certain injuries where all the soft tissues, together with the bone, are torn through or divided except the skin, leaving that covering intact; or, again, in those cases where absorptive action is particularly prominent; and, also, in long-standing cases with a disposition to rapid tissue change, hastened, perhaps, by increased blood-pressure. But clinical observations alone are not adequate to fix this exact seat, for, it must be noted that the sensation and appearance of the swelling are very deceiving in the impressions they convey of the composition of its walls. Thus in many instances both the skin and aponeurosis may be so extremely thinned or attenuated as to impart to the touch the sensation of only integumentary thickness, and accompanied, at the same time, by a violet hue as if the contained blood was immediately beneath the cutaneous covering. Furthermore, the probability of this position is re-enforced somewhat, if the first proposition of Demme be looked upon as tenable, that is, rupture of an external cranial vein from injury, producing an *epicranial* or *aponeurotic* blood-collection which results in a cyst, and finally in communication, by various ways, with the sinus through absorptive changes in the underlying tissues. Under such circumstances it can be readily appreciated how a venous blood-tumor of this description may be located between the integument and the fibro-muscular layer of the scalp.

Again, in thickening and dilatation of the cranial veins, the diseased action may originate in and be confined to that portion of the vein lying between the skin and the aponeurosis, and thus the tumor be so situated, as is shown in the case of Melchiori, and some others.

(b.) I am inclined to consider the location of this formation between the aponeurosis and the pericranium as its most frequent seat,—an opinion, it should be remarked, that applies particularly to those cases arising from within outward or from the interior of the cranium. This position was demonstrated by post-mortem examination in a number of instances; and theoretically it may be looked for in the majority of these tumors due to spontaneous perforation of the skull, cranial fracture with sinus wound, ectasia of the sinus, and disease of the diploë veins, in which, especially the two first named, the periosteum is, in all probability, lacerated, and the blood extravasated in the cellular tissue beneath the more movable aponeurosis. Opposed to this view, however, is the opinion of Stromeyer, who expresses the conviction (*Maximen der Kreigsheilkunst*, S. 362, 1861) that the cyst is always beneath the pericranium. He declares that the case of Dufour's in which the necropsy exhibited the bone covered by a thin periosteum is not opposed to his views, since all bone reproduces its periosteum when deprived thereof. But as evidence that the assertion cannot be applied unconditionally to all cases, it is only necessary to refer to the simple example of Demme's case, where, with the aid of the microscope, in a hernia of the sinus through the anterior fontanelle, it was seen that the pericranium did not enter into the cyst coverings, but was perforated and intimately attached to the circumference of the skull-opening and to the pedicle of the tumor as it passed into the cranium.

(c) Notwithstanding the assertion of Stromeyer and others, that the cyst (pouch-variety) is always seated between the pericranium and the bone, I am forced to regard this location as rare; or, at any rate, it is not the rule. This opinion is held not only from the fact that I have succeeded in finding but two examples of such a location, but also from the anatomy of the periosteum and the associated tissue involved. Such, however, may sometimes occur, of which the testimony of Stromeyer with the illustrative cases of Busch and Hutin present sufficient proof.

(d) The location between the pericranium and the bone and extending internally between the skull and the dura (vide Hutin's case) is accidental, and consequently exceptional, and does not demand further consideration. It can occur, obviously, only in serious injury to the cranium with both internal and external hæmatoma, and is not particularly connected with this class or character of tumor.

From the foregoing remarks it is very apparent that the coverings or walls of these venous formations of the head communicating with the intra-cranial circulation, are absolutely dependent upon the etiology and special form of the lesion. For example, the tunics of such a growth arising in diseased action of the coats of the sinus with protrusion through the bone, cannot be compared with simple blood effusion from skull and sinus perforation, under the scalp, and, therefore, its location and the composition of its walls must necessarily vary with the form and mode of origin of the tumor.

Again, each and all of the tumor-coverings may be normal in texture and relationship to each other, or

considerably modified or changed by diseased or natural processes, and, indeed, even differing according to the age of the individual affected.

III. *The Contents.*—Besides normal fluid venous blood, which is of course always present, this tumor may contain occasionally solid elements; but, as would be naturally anticipated, such substances seem to be confined to the cyst or pouch-variety, and, perhaps, in certain examples of the varicose form where gross dilatations with thickened walls exist.

These solid elements may be of the character of condensations from the cellular tissue, or blood concretions (phleboliths) as indicated in one of Middeldorpff's patients, and also the case of Jules Dubois, where, after complete emptying of the sac, a "core-like" substance about the size of a lentil was felt; or, again, the cyst may be lined by laminated fibrinous deposits identical in formation and composition with aneurismal coagula, and of which the case of Demme furnishes an excellent illustration.

In the instance mentioned by Foucteau three cysts were present,—the third or accessory cyst being filled with serum. But this was, undoubtedly, of accidental formation due to recognizable causes (witness the occasional formation of similar cysts in encephalocele and meningocele), and hence, although noteworthy, is without any associative significance.

IV. *The Method of Communication with the intra-Cranial Circulation.*—The manner of communication (direct or indirect), and the nature of the passage connecting the tumor with the dural circulation (normal or abnormal skull-openings), are as different and various as the causes which originate the lesion, and, indeed, it may be considered as bearing a very intimate, if not constant, relation to the etiology.

When the union takes place through normal or preëxisting cranial apertures, as the emisary foramina and the fontanelles, the perforation partakes of the usual qualities and appearance of the natural and healthy tissues forming the opening, although in some cases they may be changed, in both size and contour, and, perhaps, with alteration in the quality of the bone. This method of connection is exemplified in hernia of the sinus through the fontanelles and in varicose dilatations and enlargements of the emissaria Santorini.

When the communication is effected by means of abnormal perforations then the distinctive qualities and features of the communicating opening and passage must be largely influenced by the causative agent in operation, that is, whether it be produced spontaneously or by appreciable traumatic forces, together with the probable changes caused by the duration of the tumor.

In the instance of the former where the glandular Pacchioni appear to be the exciting or active causes of the resorptive changes in the bone—a rarefying osteitis—an aperture may be looked for of moderate capacity, and presenting an irregular and uneven outline; whereas a rarefying osteitis the result of, possibly, extensive contusion, especially if located on the frontal region with involvement of the diploë, may be attended by a very extensive loss of substance, forming an opening with jagged edges, according to the extent of the osseous tissue subjected to the exciting cause.

In the latter or traumatic cases, the orifice is directly dependent upon the character and severity of the injuring force, that is, it may vary from a delicate crack or minute puncture with displaced spiculæ to an extensive loss of the cranial wall; or, again, it may assume the features of a wide fissure, as in suture separation with displaced bone.

The number of the apertures, also, is dependent upon the special features of the tumor, varying from one to a large number, but where they are numerous, or, at least, several in number, the tumor is probably composed of an aggregation or bundle of fine varicose vessels, which penetrate the skull by exceedingly small foramina.

Again, the communication may be either direct or indirect—a condition which also stands in a certain ratio to the cause. Examples of the direct connection, where the tumor-cavity opens immediately into the sinus, are shown in spontaneous perforation through the fovea glandulares, ectasia of the sinus, and in some traumatisms.

The indirect, where the bone perforation is sinuous, or, in other words, there is a medium, in addition to the perforated bone, through which the tumor is connected with the sinus, is illustrated in all dilatations and varicosities and ruptures of the external veins, or where the communication is through the intermediary of the diploic canals.

Therefore, if any generalizations can be based on the revelations already made by clinical and post-mortem investigations, it can be safely affirmed that, First, in the *simple* or *diffused* class the cranial perforation is usually of abnormal production or formation, single, of moderate size, irregular contour, and direct; and, Secondly, in the *venous* or *vascular* class the communication takes place more frequently through a normal skull opening, is variable in size and number, of a definite shape, and indirect in its course—but exceptions to this may exist, as seen in certain cases of rarefying osteitis with diploic involvement.

SYMPTOMS.

In the majority of cases the presence of the growth produces so little discomfort or uneasiness, and in some instances not the slightest inconvenience, other than that of location, is experienced by the patient, that it is scarcely possible to name any general symptoms which may be regarded as characteristic of the lesion.

Among such indefinite or variable symptoms encountered, however, *vertigo* or *dizziness* is the most prominent and most constantly present. In many of the cases this symptom was complained of, especially when the tumor was at its maximum volume, but not always appearing spontaneously, and more often the result of posture with the head dependent or flexed; or produced by compression of the growth, particularly such as to cause the rapid forcing out of its contained blood, although, on the other hand, once or twice it was noted that slight pressure or supporting the tumor by the hand lessened or relieved the

vertigo. But it may be stated that, as a rule, when dizziness is complained of it is the result of those causes which produce increased blood-pressure, or determination of blood to the head, such as compression of the jugular veins, position, muscular exertion, mental emotions and so forth.

Again, it is possible for pressure upon, or forcible reduction of, the tumor to cause serious cerebral disturbance, amounting almost to compression, as is vaguely referred to in one or two records; but such is rare, and must be regarded as a very infrequent attendant.

Accompanying vertigo, although much less frequent, *pain* is sometimes met with, and finds expression chiefly in the form of headache. It rarely arises spontaneously, and when present is usually associated with increased tension of the tumor, or, in other words, increased blood-pressure; and in some instances it was only produced by direct pressure exerted upon the swelling. Pain localized in, or confined to the vicinity of, the tumor is mentioned in one or two cases.

The local symptoms are much more characteristic and reliable than the general or systemic ones above mentioned.

The most conspicuous point in the examination of the tumor is its *seat* or location, which, in a general way, is nearly always in the tract of the superior longitudinal or some other sinus, or adjacent thereto; and, consequently, the proximity of a blood swelling to the course of any of the cranial sinuses, especially if presenting obscure symptoms, should be suggestive of this variety of sanguineous formation. But, as naturally anticipated, its actual or anatomical situation is positively dependent upon the form or variety of the lesion. Thus it may be briefly stated that the *diffused* form the result of a rarefying osteitis, especially erosion or resorption of the skull by the Pacchionian bodies, is found in or near the median line on the upper and posterior part of the cranial vault, that is, on either side and along the course of the saggital suture (in which position the glandulæ Pacchioni are in greatest numbers), at its junction with the lambdoidal, and even extending a short distance on each side along the latter suture.

In the second or *venous* variety the situation is again influenced by the special structures involved. First, if the growth be formed at the expense of an emissary vessel it will be located on that portion of the cranium where these exist, and particularly over the site of the parietal and occipital veins, which are the larger and most often implicated; Secondly, if a true varix sinus exist involving the coats of the longitudinal sinus, then the pouch is more frequently located over one of the fontanelles; whereas, thirdly, in involvement of the diploic system of vessels it is apt to be confined to the os frontis and ridges of the occipital bone, but particularly the forehead, in which localities the diploic structure reaches its most complete and highest development. In traumatic cases the location is governed, of course, by the portion of the skull receiving the injury, but usually such forces are applied to the frontal and anterior-summit regions of the head.

The moderate *size* of the tumor together with the direct influence exerted over its volume by certain conditions, are noticeable features. Even when distended to its fullest capacity it is usually of medium dimensions, although several cases are mentioned where it attained the volume of a large apple; whereas when quiescent, that is when the swelling is relaxed or at its minimum enlargement, the growth is quite small and sometimes scarcely perceptible if not completely indiscernible.

These changes or alterations in the size of the growth are very characteristic, and can be seen and felt to take place under those conditions affecting its distension and relaxation: the tumor slowly rising and swelling up in the dorsal decurbitus or any position with the head lowered; by interference with the proper return of venous blood from the interior of the cranium, as in compression of the jugular veins, forced expiration, crying, coughing, sneezing, and the like; occasionally by a full stomach, muscular exertion, or mental emotions; and, rarely, during the normal respiratory effort; however, in converse influences or those conditions lessening or reducing expansion or dilatation, the tumor recedes gradually to a lower level, and often entirely disappears.

The *color* of the swelling in most instances is normal and does not differ from that of the healthy skin, but this may be materially influenced by the consistency or thickness of the tegumentary coverings, and may also vary with the degree of distension of the tumor. Thus, when the walls are very thin it may assume constantly a purple or violaceous hue, or again the discoloration of the walls may be recognized only during distension, and fade away to a natural color with the relaxation of the tumor. Furthermore, changes in its color may be the result of coexistent disease of the skin of the tumor itself, namely, of a nævoid character, as was noted in several cases; but such a complication is infrequent, and when it does occur may be looked for, everything being equal,in congenital in preference to the other classes.

The influence of *head posture* on the volume and resistance of the tumor is so apparent to both the touch and eye that, manifesting itself as it does always, perhaps, in this affection, the symptom of *dilatation* and *reduction* produced thereby may be reasonably regarded as a pathognomonic character. Without an exception, I believe, this effect of position was decided and marked,—the tumor being felt to attain its maximum volume when any position with the head lowered was assumed, and even simply bending the head forward producing very evident increase of size and tension; whilst the reverse attitude, with the head fixed and erected, being attended by a diminution in both resistance and bulk.

Similar results are produced by *compression of the jugular veins.* This was employed in a number of instances, producing unequivocal impression upon the growth, and its influence may be taken as a rational symptom, and one of special value when associated with additional evidence; for, it is needless to remark, its range of applicability is much too wide and extended to be alone of diagnostic import in this type of sanguineous tumor of the skull.

Probably next in importance to postural influence (in the pouch-variety) may be regarded the symptoms of *compressibility* and *fluctuation*, which taken together furnish positive evidence of a fluid-containing pouch or cavity with an intra-cranial outlet. In all the cases of the pouch—or sac—form these symptoms were observed, and were among the chief distinctions—the swelling readily, and nearly always completely, but slowly subsiding under continuous lightly applied pressure with the hand or fingers, and tardily redilating upon the removal of the compressing force,—and distinctly conveying to the touch the sensation of a sac filled with fluid, which was being emptied.

The rapidity and ease with which pressure accomplishes evacuation of the pouch is dependent, necessarily, upon the freedom and directness of the communication with the cranial cavity, but, as a rule, the reduction is rather slow and gradual.

Another symptom of considerable weight is the ability in many instances to recognize by the finger, after reduction of the growth, some *osseous alteration*, or even depression or indentation in the skull, corresponding to one or more openings leading to its interior, and which may be of considerable dimensions.

Furthermore, *puncture* by means of a trocar and canula with direct exploration of the bone, may disclose the existence of the aperture where it had eluded careful digital search. However, even such unsuccessful efforts to discover the communicating entrance should not be considered as conclusive evidence of its non-existence, for failure to detect the osseous perforation by this method occurred in several cases in which a subsequent incision or post-mortem examination demonstrated its presence.

The *sensation* or feel of the tumor-walls, as conveyed through manipulation, is to be taken into account in a description of the symptoms. In uncomplicated cases of the pouch-variety, especially the simple diffused form, after being emptied, the sensation is that of a loose, lax, movable covering of healthy skin tissue, of different degrees of thickness according to its constituents; whereas if partaking of aneurismal qualities, that is, with fibrinous depositions on its interior surface, these are recognized as usually irregular but firm or solid masses occupying the substance of the walls, or, perhaps, the cavity of the growth. In the varicose-type there is readily discernible after evacuation or reduction of the swelling, a spongy mass or substance, varying according to the character of the varicosity, but which nearly always remains as an irreducible structure between the fingers.

Pulsation and *bruit* require notice only because they are mentioned as occurring in several cases. They are to be regarded in the light of extremely rare accompaniments, and practically must be entirely eliminated from the list of symptoms. When met with they are explicable on the ground of contiguity to the cerebrum and a dural sinus or artery.

Finally, a symptom of no indifferent significance is that attending the employment of *circular compression*. This constriction may be applied either to the head, by means of a band or cord tightly drawn around the cranium with compresses in the temporal fossæ, or to the tumor itself, as by a ring or similar apparatus closely encircling the base of the growth. By this means the external or superficial venous blood current is largely separated from the internal or intra-cranial venous circulation, and the subsequent manipulation of the growth now enables one to decide from which system of veins the blood supply is derived.

The method was employed quite a number of times, and in each instance fully demonstrated its utility and importance as a diagnostic measure.

DIAGNOSIS.

In uncomplicated cases, the history of the lesion, its location, want of marked elevation, and slow progress; the usual normal color and texture of the integument of both the tumor and adjacent surface; the positive influences of the posture coupled with those resulting from pressure of the jugular veins; compressibility of the growth—its easy and usually complete but slow evacuation; frequent fluctuation; the recognition by the finger or exploring needle of bone alteration; and very often of perforations in the cranium; the absence of bruit and pulsation; the effect of the application of a circular compression; vertigo produced by certain positions and movements; and lastly, the demonstration by puncture of the presence of venous blood filling the tumor, constitute a symptom-group scarcely to be misinterpreted. Hence, as a rule, the diagnosis should not offer specially confusing or obscure features.

There are, however, a number of lesions presenting symptoms in common with this formation, which might claim consideration in a nice or accurate differential diagnosis, and, therefore, the principal of these affections call for a brief reference:

Thus a certain degree of resemblance is borne to (1) meningocele and (2) encephalocele, or (3) superficial nævus coexistent with these; (4) cephalhæmatoma; (5) simple subcutaneous venous erectile or vascular tumor (including, possibly, the capillary variety); (6) lymphatic vascular tumor; (7) certain cystic tumors; (8) venous aneurism; (9) rarely aneurism of the middle meningeal artery associated with bone erosion; (10) fungus of the dura mater; (11) pneumatocele; (12) traumatic cephalhydrocele; and, under rare circumstances, (13) circumscribed abscess, especially where skull perforation has taken place.

In those instances, however, where an individual case offers specially confusing difficulties, or, at least, where questionable points prevent a definite conclusion, the demonstration of a tumor containing fluid, completely or partially reducible under lightly applied pressure without producing cerebral disturbance, directly influenced by posture and circular compression, and of which puncture or aspiration shows the fluid to consist of living venous blood, would be quite sufficient, against otherwise doubtful symptoms, to confirm the diagnosis.

PROGNOSIS—PROGRESS.

Analysis of the cases collated shows that, this class

of sanguineous tumors if left to nature and not disturbed by treatment, does not incline to a fatal termination; and, therefore, the prognosis may be looked upon as favorable in all the types of the lesion as far as life is endangered or even serious impairment of health is concerned, and, indeed, spontaneous cure is said to have resulted in one recorded instance.

Where, however, surgical interference is resorted to with the view of a radical cure or permanent resolution of the growth, then the prognosis becomes of very different import—assuming an important, if not serious, phase—and being materially influenced by the special type or variety of the tumor involved, with also the particular operative method adopted.

In the large majority of those instances where no active surgical treatment was employed, and which were kept under observation for a longer or shorter period, there was not only no marked change in the attending symptoms, but the progress was noticeably slow—there being but little tendency evinced to extension or any decided change whatever. Thus, in illustration of the general stationary tendency of these tumors after a certain size is attained, it may be mentioned that of twelve cases, embracing all the classes and the several types, which were followed up, eight were noted as remaining unchanged after five, twelve, fourteen, twenty, forty, forty-three, forty and seventeen years, respectively; and in the latter instance the growth disappearing spontaneously after a long examination, including repeated palpations. But in two other instances moderately rapid growth was reported,—in one of which the progress being slow for twelve years, and then in the succeeding four years rapid increase took place, with the development at the same time of a second tumor or sac communicating with the first.

Whereas, on the other hand, among seven patients upon whom operative measures were practiced, comprising free incision, strangulation by ligature of the base, the actual cautery, and electro-puncture, there were four deaths, two each from immediate hæmorrhage and suppurative phlebitis with meningitis. The three successes which resulted were respectively from strangulation by ligature, incision, and electro-puncture. It must be referred to, also, that the two cases of M. Azam were unaffected, apparently, in their symptoms and progress by the repeated punctures of the pouch which were practiced for diagnostic purposes.

TREATMENT.

Notwithstanding the fact that *palliative* or protective measures have received the strong endorsement and recommendation of the larger number of writers upon this subject, and by some is regarded as the only treatment to be adopted (v. Gross, Dupont, and others), and although almost universally employed, with but few exceptions, in the collected cases, the histories of these prove that such methods exercise hardly any, if, indeed, not being wholly without appreciable effect over the progress or course of the affection, and hence must be declared not only fruitless, but, in some instances, positively harmful.

This can scarcely serve as a matter of comment when the anatomical and pathological characters of the lesion are considered, and, therefore, beyond the mere statement of the results of palliative treatment, this portion of the subject does not demand further consideration.

Measures having a radical or *curative* object in view, were of two forms, namely, direct compression of the growth, and certain operative procedures.

The former, or the application of *direct compression* to the tumor, occupies a very similar position to that of palliation, as far as exerting any retarding or inhibitory influence over the course of the disease; and, at the same time, on account of the effect produced in several trials of the method, it should be regarded also in the light of a dangerous or hazardous operation when indiscriminately employed, and especially so in certain varieties of the lesion. Thus, in a case of probable varicose emissary veins, M. Azam punctured the tumor and practiced steady and continuous pressure for twenty days, but not the slightest benefit whatever was obtained, and the patient was dismissed in an unchanged condition.

Hecker applied compression for a considerable time without effect, in a case of frontal diploic tumor with loss of osseous tissue; continued and carefully regulated pressure proved equally useless in the patient of Nèlaton and Richard; and the efforts of Hutin to cure by compression, with leaden and silver plates, a blood-pouch resulting from cranial fracture and accompanying sinus-wound, were likewise ineffectual. Again, Dubois, in a case of frontal tumor, probably of the diffused variety, first attempted compression by bandages, but without benefit or change; then later forceps-pressure was employed for forty-eight hours, but such excessive pain associated with cerebral symptoms of an ominous character, and decided reactive or inflammatory changes both within and without the sac, were provoked, that the attempt was necessarily abandoned. This was also devoid of beneficial result.

In Verneuil's patient spontaneous subsidence of the growth took place after repeated and prolonged handling and palpation of the tumor. Such manipulation should be reckoned as a form of compression, but in this instance the observation loses its value because of the inaccuracy of the history, failure to follow up the case for a sufficient length of time, and the consequent doubts expressed by the reporter himself.

The nature and extent of the *operative* interference employed, are represented by the following methods, viz.: free incision, and incision combined with cauterization; constriction or strangulation of the base; the actual cautery; and electro-puncture.

The operation of laying open the tumor by *free incision* was resorted to in four instances.

Pott, mistaking a diffused form of the lesion following direct wound of the sinus from fracture in the person of a lad, employed incision and trephining with a favorable result.

In the case of an adult suffering from a growth composed of varicose venæ emissaria, Moreau divided the tumor directly across, and, in order to staunch the alarming hæmorrhage which ensued, he

made frequent cauterization of the wound with antimony. Death took place on the fourth day from suppurative phlebitis and meningitis.

Flint's patient was an infant with a probable ectasia of the sinus through the fontanelle, in whom immediate dissolution from hæmorrhage was the consequence of an extensive incision.

The last instance is the patient of Hutin, who had an old blood-tumor of the cranial vault produced by injury. During a subsequent attack of erysipelas, in which he became unconscious, this swelling was taken for a pus collection and freely incised. Venous blood flowed abundantly, but pressure easily controlled it. Pleuro-pneumonia caused a fatal termination.

In two other cases of probable varicose emissaries, small punctures were made to aid diagnosis, but without observable effect.

There are two examples of constriction or *strangulation*. Mersemann's patient was an infant at the breast, with a venous tumor of the varicose type. Complete strangulation effected a cure. Foucteau encircled the base of a large tumor on the head of a child, which proved to be a sinus ectasia, with a stout ligature and then punctured the growth. A large quantity of blood was withdrawn, and the child succumbed on the following day, from hæmorrhage, he believes.

The *actual cautery* was employed by Michaud in a varicose formation. Erysipelas and meningitis followed the application, and death took place therefrom on the seventeenth day.

But one case, also, represents the use of electro-puncture. This was in an adult upon whom Bardeleben successfully punctured the tumor, which was probably a varicose formation, communicating with the longitudinal sinus.

Summing up the evidence furnished by these several cases of operation, it is seen that incision gives one cure in four, and that one being of the traumatic diffused form; strangulation gives one cure in two, the successful issue being of the varicose type; the only instance in which the actual cautery was employed—a case of varicose emissary veins—ended fatally; and the single use of electro-puncture in a similar form of the lesion was attended by gratifying results.

The causes of death in these cases brings up the question of the dangers to be apprehended from surgical or operative measure, and which may be embraced by phlebitis, attended by thrombosis and embolism, meningitis, septicæmia, hæmorrhage, air-embolism, and serious cerebral disturbances.

Phlebitis, meningitis and septicæmia are so closely connected in the present relation that they may be properly discussed under the same heading. From this cause two deaths took place out of seven operations. and therefore on this account and for apparent anatomical reasons such a danger assumes an important and just significance. This is furthermore borne out by well-known clinical examples, and also by the experiments of Schellmann (v. Bergmann, l. c.) who found that the chief danger resulting from sinus-wound was the formation and subsequent disintegration of the thrombus—leading to septicæmic infection. However, the aceptic management of wounds which characterizes modern surgical practice, associated with our increasing enlightenment concerning the tolerance of the venous system in general, and especially, in the present instance, the veins of the brain and its enveloping tunics, to operation wounds and accidental injuries, not only marks a great scientific advance in surgery, but has reduced in a wonderful degree the risks and dangers to be apprehended therefrom; and consequently revolutionized our ideas of the once dreaded inflammatory and septicæmic processes.

Although two fatal results are reported in our collection from immediate hæmorrhage, I cannot regard this danger from sinus-wound in the same light as it is evidently looked upon by many authorities. Wounds of the dural sinuses if extensive are, undoubtedly, attended by profuse and even alarming loss of blood, but the methods at our disposal for controlling such hæmorrhage are both trustworthy and easy of application.

Thus the efficiency of simple pressure in arresting hæmorrhage is exemplified not only in the special lesion under consideration by the cases of Pott and Hutin, with those cases which were simply punctured, in which pressure sufficed to permanently staunch all bleeding, but also in different injuries and wounds of the sinuses, as illustrated by the patients of Reid (*Edinburgh Med. Jour.*, April, 1864), Sands (*Annals of Anat. and Surg.*, vol. viii, p. 100, 1883), Hopkins (*Annals of Surgery*, July, 1885, p. 67), and other easily cited instances, and more recently by the experiments of Senn, contained in an admirable article on the subject of Air-Embolism, read before the American Surgical Association, April, 1885 (*v. Society Transactions*, 1885, also *Annals of Surgery*, June, July, August and September, 1885).

Numerous other authorities might be adduced in confirmation of the efficiency of pressure, but, beyond the additional mention of the paper of Hector Cameron (*Lancet*, May 24, 1884), in which is shown that in many, or the majority of, instances only the gentlest pressure is required to stop blood-flow from a wounded sinus, further citations would be superfluous.

If I have spoken in commendatory terms of pressure as a hæmostatic measure in sinus injuries, I believe that I am warranted in speaking in an equal, if not more positive, manner of the ligature and suture, especially applied laterally. It is true that Senn *(l. c.)*, and he is not alone in this opinion, considers suturing the sinus (including, evidently, lateral ligature) as unreliable and in most instances anatomically impossible, but the successful instances where such measures were adopted are sufficiently numerous to justify my expressions of confidence in the proceeding; and, as furnishing clinical and physiological support to the practice, the experiments of Schellmann, already referred to, demonstrated the important fact that wounds of the sinuses heal without causing obliteration of the sinus,—the wounded wall becoming thickened in the reparative process but the lumen of the vessel remaining unobstructed.

Such successful employment of the lateral suture and ligature in the cases of Brinton (*Philadelphia Med. Times*, vol. xii, p. 577, 1881) and Parkes (*Annals of Anat. and Surg.*, vol. viii, p. 118, 1883), are by themselves adequate testimony of its practical application and reliability.

Proximal and complete double ligature of the sinus has been shown to be largely devoid of serious results, and calls for adoption when other less severe methods have failed or proved incompetent to meet the indications required.

Besides other important facts shown by Schellmann, he has indicated also, by both experiment and collated cases, that contraction in the calibre or even complete obliteration of the lumen of the large dorsal sinuses need occasion no constant disturbance in the brain, but, on the contrary, that such obstructions may and do exist for an indefinite time without the manifestation of any grave cerebral symptoms. Additional evidence of the immunity with which these venous channels may be reduced or lessened in their calibre, is seen in the case of Parkes (*l. c.*), where the sinus longitudinalis was diminished at least one-third by lateral suture, and also that of Kuester (*Berliner Klin. Wochenschrift*, Nov. 14, p. 673, 1881), who, in the extirpation of a sarcomatous growth from the dura mater of the frontal region, successfully practised prophylactic double ligation of the exposed longitudinal sinus.

This subject of deligation of the sinus has been particularly studied by Senn, and, as a result thereof, he considers it a safe measure for the arrest of hæmorrhage, and believes that preliminary ligation will become an accepted procedure in the removal of dural and other tumors involving this structure. Certainly the subject is an important and interesting one, and with me fully maintains the feasibility of ligation of the sinus in specially severe cases of ectasia or hernial protrusion of the sinus-wall, and also of the diffused variety, demanding surgical action.

The aseptic tampon (Senn), cold (Abel), position, and styptic substances as means of arresting bleeding from this locality need not be discussed.

Air-embolus or aspiration of air into the sinuses is a danger which, although having but one known recorded instance of a fatal occurrence to demonstrate its possibility, namely, Volkmann's case (reported by Geuzmer (*Verhandlungen der Deutschen Gesellschaft für Chirurgie*, vol. vi, p. 32), must be recognized and borne in mind in all operations implicating these venous reservoirs; and, indeed, the assertion of Franck (*Sur la transmission de l'aspiration thoracique jusqu'aux canaux Veineaux des os du Crâne, etc.; Gazette Méd.*, No. 25, 1881) that he has witnessed more than once after trephining the entrance of air into the diploic veins, should admonish us that the so-called danger zone is not limited to the cervical region, and to exercise due precaution in dealing with all operations and injuries implicating the cranial tissue.

It is unnecessary to examine any farther this danger of air-aspiration in these localities, and for more accurate information of the subject generally I cannot do better than direct you to the literature of the entrance of air into veins, and in particular the valuable and elaborate paper of Senn, which has been already several times referred to and quoted from.

The occurrence of serious brain perturbations and disturbances attending operative measures upon the sinuses, rests almost entirely in an interference with the delicate equipoise of the cerebral circulation. This question has been clearly answered in the negative by the observations of Schellmann, and the cases I have referred to, to which may be now added the patient of Schüppel (*Ziemssen's Handbuch, Galle and Pfortader*, p. 324, mentioned by Browning, *l. c.*) in whom the superior longitudinal and both transverse sinuses were found obliterated by an organized thrombus, and with compensatory anastomosis.

In conclusion, after this brief sketch of the treatment of this class of sanguineous formations, I must express myself as favorably inclined towards curative operative measures—especially by the suture and ligature, electro-puncture, and strangulation of the base—in certain extreme instances, the particular method chosen to be governed by the type and form of the individual case involved.

RECAPITULATION.

As a result of the foregoing study the following summarized conclusions are reached:

1. Cranial venous blood tumors communicating with the dural circulation are to be classified into three divisions, namely: the congenital, spontaneous, and traumatic.

2. These classes are divided, upon both anatomical and pathological grounds, into two species or varieties: *a*, the diffused, produced by a perforation of the cranial plates and the wall of the subjacent sinus, resulting in a limited extravasation of blood beneath the scalp and thus forming a blood-cyst in direct or immediate communication with the affected sinus; and *b*, the venous or vascular, in which the tumor is directly formed at the expense of the venous coats, and includes in its scope the sinuses, the venæ emissaria, and the diploic vessels.

3. The venous type is the commonest in point of occurrence, and of this type, varicose involvement of an emissary vein is the most frequent form; whilst the diffused is the rarest of all the varieties.

4. The diffused variety is especially characteristic of the spontaneous and traumatic groups. The venous or vascular type occurs most frequently in the congenital class, but at the same time is often met with in the spontaneous division.

5. The medium of communication with the intracranial circulation is, in the very large majority of instances, represented by the superior longitudinal sinus, particularly its central and posterior portions. The emissaria Santorini most often implicated are, probably, the superior or posterior parietal emissories, which pair, also, are the most constant and uniform in their existence. When the diploë is involved the frontal region is the usual seat—no instance of a similar occipital formation having been observed.

6. In a causal relation, some morbid action in the venous walls is notably prominent in the congenital class; in the spontaneous group, atrophic or rarefying

osteitis ranks first as a cause, and venous disease secondly; and in the traumatic division, direct injury, which nearly always means fracture, is the only etiological factor.

7. Palliative measures for retarding or arresting the progress of the growth, and certain forms of compression intended to act as a curative agent, are useless applications—the latter, in addition, being capable of producing alarming head symptoms, and hence may be harmful.

8. General surgical interference is not called for, because the history, nature, and progress of the lesion is opposed to indiscriminate operation; being of that character to render such treatment unnecessary. When, however, operation is deemed expedient or is demanded, the following methods seem to be open for adoption:

First, if the growth be either of the diffused type, or that form consisting of a varix-sinus, exposure and ligation of the pedicle (if such exist), or, if necessary, deligation of the sinus in its course, the trephine being boldly employed to furnish requisite space for the necessary attending manipulation. The lateral ligature and suture, when applicable, are preferred to complete ligation.

Second, if the tumor be composed of varicose emissary vessels, or, perhaps, of diploic dilatations, either electro-puncture or strangulation of the base are justifiable procedures, but preference is given to electro-puncture.

BIBLIOGRAPHY.

1. Acland, Dr. (of Oxford). Vide Ogle, loc. cit.
2. Andrews, Jno. S. Case of Tubercular Encephalitis, with Pulsating Tumor on the Occiput: New York Journal of Medicine, n. s., vol. xv, p. 356, Nov., 1855.
3. Azam, E. Gazette Médicale, p. 411, 1854: Dupont, op. cit., p. 20: Dubois, loc. cit.
4. ———, L'Union Médicale, p. 49, 1858: Gaz. des Hôp., 14 Jan., 1858: Also Dupont, op. cit., p. 20.
5. Bardeleben. (Related by B., at a meeting of naturalists, in Speyer.) Herman Demme, loc. cit.
6. Beikert. Dissert. De Nervis Duræ Matris, Argentorati, 1772, S. 33. Also Demme, loc. cit.: Dupont, op. cit.
7. Beyckert, vide "Beikert."
8. Bérard, P. (Senior). Chassaignac, loc. cit.; Dupont, op. cit: Also Legouest et Servier, Dict. Encyclop. des Sciénces Méd., 1 Série, t. xxii, Paris, 1879, Art. Crâne.
9. Bergmann, Dr. E. v. Die Lehre von den Kopfverletzungen; Deutsche Chirurgie, Leif. 30, 2 Abth., Cap. vi, S. 365, 1880.
10. Bruns, Dr. Victor. (3. Varix Verus Circumscriptus, and 4. Varix Verus Cirsoideus.) Handbuch der Praktischen Chirurgie für Arzte und Wundärzte, Bd. 1, Abth. 1, S. 191, Tübingen, 1854. Atlas, Abth. Taf. III, Fig. 11, 12, und 13. Also Demme, loc. cit.
11. Burchard. Rech. sūr le Céphalem. Journal l'Expérience, p. 292, et seq., 1838. Also quoted by Dupont, op. cit.
12. Busch. Heidelberger Klinische Annalen, Bd. 11, Hft. 2, S. 249, 1826: Also Pigné, Chassaignac, Burchard, and Dupont, loc. cit.
13. Chassaignac. Thése sur les tumeurs de la voûte du Crâne, p. 125, 1848: vide also Dupont, op. cit.
14. Demme, Dr. Herman. Ueber Extra-Cranielle, mit den sinus Duræ Matris communicirende Blutcysten (illustrated), Virchow's Archiv, Bd. 23, fol. 48, 1862.
15. Dubois, Jules. Bulletin de la Soc. de Chirurgie de Paris, t. x, p. 238, 1859 (Séance du 23 Novembre). Also Legouest et Servier, op. cit.
16. Dufour, Gustave. (Fistule Osteo-vasculaire.) Gaz. Med. de Paris. p. 767, 1851. Demme, loc. cit., Bruns, op. cit., Stromeyer, Maximen der Kreigsheilkunst.
17. ———, Comp. rend. et Mém. de la Soc. de Biol., t. III, p. 155, 1851. Also Dupont, op. cit.
18. ———, Léon. Dissert. Inaug., vide Michaud, loc. cit.
19. Duplay, Simon. Tumeur Sanguine de la vôute du Crâne en Communication avec la circulation Veineuse intra-Crânienne, Archiv. Gén. de Méd., vi Série, t. 29, p. 94, Jan., 1877. Also Legouest et Servier, op. cit.
20. ———, vide Follin et Duplay, Traité Elémentaire de Pathologie Externe, t. III, Paris, 1868–9. Also Legouest et Servier, loc. cit.
21. Dupont, Emile, Pierre, Louis. Essai sur un nouveau genre de tumeurs de la vôute du Crâne formées par du sang en communication avec la Circulation Veineuse intra-Crânienne, 74, pp., 4to., Paris, No. 78, vol. 617, 1858. Also Legouest et Servier, op. cit.
22. Flint, vide Pigne; Chassaignac; Dupont; Legouest et Servier.
23. Follin, E. (et Simon Duplay). Tumeurs Veineuses en Communication avec la Circulation intra-Crânienne. Traite Elément. de Pathol. Externe, t. III, p. 585, Paris, 1868–9.
24. Foucteau. Note pour Servir a l'histoire des Kystes des Enfants nouveau-nés, Gaz. Méd. de Paris, III Serie, t. xvi, p. 695, Nov., 1861.
25. Francke, vide L. Stromeyer, Deutsche Klinik, Bd. 11, S. 160, 13 April, 1850. Maximen der Kreigsheilkunst, S. 362, 1861. Also Bruns, op. cit., Demme, loc. cit.
26. Frank. Lehrbuche der Chirurgie, Bd. 11, S. 49: also Demme, loc. cit.
27. Giraldès. Tumeur Veineuse. Bull. de la Soc. de Chir. de Paris, 2 Série, t. v, p. 357, 1864 (Séance July 27): also Legouest et Servier, op. cit.
28. Gross, Sam'l D. Venous Tumors. System of Surgery, etc., 6th ed., vol. 11, p. 28, Phila., 1882.
29. Hecker, Carl Friedrich Franz. Varix Spurius Circumscriptus Venæ diploicæ frontales, etc. Erfahrungen und Abhandlungen im Gebiete der Chirurgie und Augenheilkunde, Ss. 151–155, Erlangen, 1845. Also Demme, loc. cit.; Bruns, op. cit; Stromeyer, loc. cit.
30. Hutin. Mémoires de Médecine Militaire, 2 Série, t. xiv, p. 232, 1854. Also Dupont, op. cit., p. 17.
31. ———, vide Gustave Dufour, loc. cit.; and Dupont, op. cit., p. 10.
32. Jacobi, vide Beikert, op. cit. Also Demme, loc. cit., and Dupont, op. cit.
33. Jakobi, vide "Jacobi."
34. Larrey, Baron H. Gaz. des Hôp., 14 Octobre, 1856. Also Dupont, op. cit.
35. Legouest (et Servier). Tumeurs Sanguines en Communication avec la Circulation Veineuse intracranienne. Dict. Encyclop. des Sc. Méd., Art. Crâne. (Pathologie Chirurgicale), 1 Série, t. xxii, Section viii, pp. 544–554, Paris, 1879.
36. Mastin, Wm. M. Venous Blood Tumors of the Vault of the Cranium Communicating with the intra-cranial venous circulation, especially through the medium of the Superior Longitudinal Sinus. Annals of Surgery, April and May, vol. 1, Nos. 4 and 5, 1885 (Also Reprint, pp. 40. St. Louis, 1885).
37. ———. Venous Blood Tumors of the Cranium in Communication with the intra-cranial Venous Circulation, especially the Sinuses of the Dura Mater. Read by invitation before Surgical Section, Amer. Med. Association, at St. Lonis, April, 1886. (Present paper.) (Also reprint, pp. —, Chicago, 1886.)
38. Melchiori, Giovanni. Gaz. Med. di Milano, Nro. 1, 1843. Oester. Medicin. Wochenschr., Nr. 33, p. 909, Wien, 1843. Froriep's Neue Notizen, Bd. 26, p. 247. Also Hecker, op. cit., p. 156. Bruns, op. cit., p. 192. Demme, loc. cit.
39. Mersemann. Observateur Méd. Belg., 1834. Schmidt, Jahrbūcher, Bd. viii, p. 72. Bruns, op. cit. Demme, loc. cit.
40. Michaud. Tumeurs Erectiles du Crâne Communiquant avec le sinus longitudinal Superieur. L'Union Med., 11 Sér., t. 1, p. 254, 1859, 8 Feb.
41. Middeldorpff, Gaz. des Hôp., 14 Octobre, 1856.
42. ———. Vide Dupont, loc. cit., p. 26.
43. Moreau. Vide Pelletan, loc. cit.
44. Nélaton, vide Dupont, op. cit., p. 28.
45. Ogle, John W. Cases illustrating the Formation of Morbid Growths, Deposits, Tumors, Cysts, etc., in connection with the Brain and Spinal Cord, and their Investing Membranes. With Observations. Case cxcvi. Blood-cyst beneath the Scalp, communicating with the Torcular Herophili. Brit. and For. Medico-Chirurg. Review, vol. xxxvi, p. 212, July, 1865.

46. Pelletan. Clinique Chirurgicale, t. 11, p. 76, Paris, 1810. Also Bruns, op. cit.; Demme, loc. cit.; Dubois, loc. cit.
47. Pigné. Mémoires sur les Cephalématomes, Journal hebdom., t. xii, p. 480, Sept., 1833. Vide also Dupont, op. cit.
48. Pott, Percivall. Chirurgical Works, 1st Amer. from last London ed., vol 1, p. 132, Phila., 1819. French ed., t. 1, p. 151, obs. 27, 1760. Legouest et Servier, op. cit.; and Dupont, op. cit.
49. Richard. Vide Dupont, op. cit., p. 28.
50. Schellmann, Ueber Verletzungen der Hirnsinus, Geissen, Inaugural Dissertation (quoted by Bergmann, op. cit.).
51. Servier (Legouest et Servier). Dict. Encyclop. des Sc. Méd, Art. Crâne (Pathologie Chirurgicale), 1 Sér., t. xxii, section viii, pp. 544–554, Paris, 1879.
52. Stromeyer, L. (of Kiel). Ueber Sinus Pericranii. Deutsche Klinik, Bd. 11, S. 160, 13 April, 1850. Also Demme, loc. cit.; Bruns, op. cit.
53.———. Maximin der Kreigsheilkunst, S. 362, 1861. Also Demme, loc. cit.
54. Velpeau. Gaz. des. Hôp., 2 Sér., t. viii, p. 87, 1846.
55. Verneuil, A. Bull. de la. Soc. de Chir., t. iv, p. 414, et seq. Dupont, op. cit., p. 22.

MEDICAL PROGRESS.

CAFFEINE AS A DIURETIC.—Our knowledge of the physiological action of caffeine is insufficient to fully explain the powerful diuretic result that so frequently attends its therapeutic use. The modification of the pulse-rate and the increased blood-tension that ensue upon its use owing to excitation of the vaso-motor centre, do not explain the phenomenon. For this reason, W. VON SCHROEDER, of Strassburg, followed the question up experimentally. He has arrived at the conclusion that caffeine exercises a powerful and energetic influence upon the renal se cretion through a direct stimulation of the specific secretory elements.

Caffeine may so influence the vaso-motor centre that urine-secretion becomes diminished. In order to eliminate any influence on the part of the vaso-motor centre upon the secretory apparatus, Schroeder produces paralysis of the named centre in animals by means of chloral hydrate.

Thus a marked reduction of blood-tension results. A rabbit of 4½ pounds was profoundly chloralized, and canulæ were inserted into the ureters. Thereupon, within a space of seventy minutes time, one-half gram, seven and one-half grains, of caffeine were injected in three portions into the jugular vein. The amount of urine excreted during the seventy minutes was about eleven times the ordinary normal amount. In the absence of any specific secretory nerves of the kidneys, and from the circumstance that the circulation after chloralization takes place in strongly collapsed vessels, the reporter arrives at the opinion that caffeine must exert a direct influence upon the renal epithelia.

In order to demonstrate this conclusion more clearly, the experimenter proceeded by tearing all the nerve-filaments entering the one kidney of an animal, and left the nerve supply of the other gland intact. Thus all vaso motor influence upon the one kidney is eliminated. In order to preserve this influence in full force as regards the intact kidney, the animal was placed, before experimentation, under the hydrochlorate of morphine. In a rabbit, the above described experiment showed an enormous increase of secretion from the kidney whose nerves had been severed, over the amount eliminated during the same time from the intact kidney, after caffeine had been introduced into the circulation. Therefore, it follows that caffeine stimulates diuresis by direct action upon the specific secretory epithelia.

The strong diuretic action of caffeine has, until recently, escaped general attention on account of the double influence exerted by the alkaloid, *i. e.*, the excitory influence upon the central nervous system, similar to that of strychnia, and the stimulating influence upon the secretory elements of the kidney. The latter physiological action may be inhibited and even completely masked by the former. The method of pharmacological analysis adopted by Schroeder, threw out the vaso-motor element of action and brought the special influence upon the renal gland apparatus into prominence.

Schroeder compares this dual quality of caffeine to that of pilocarpine. Small quantities of these alkaloids are sufficient to promote specific secretion. This peculiar action of caffeine demonstrates, according to Schroeder, the glandular nature of the kidney in a more pointed manner than any hitherto adduced argument, and shows that the kidney is not a simple filter.—*Weekly Med. Review*, July 24, 1886.

CONTROLLING BLEEDING DURING EXCISION OF THE TONGUE.—MR. JORDAN LLOYD describes a method controlling bleeding from the tongue during partial or complete excision. The patient is placed under ether, a gag adjusted, the left index finger is carried well to the bottom of the glosso-epiglottidean pouch, defining clearly the hyoid bone with its cornua, the front of the epiglottis, and the back of the root of the tongue. A stout, long, well-curved, mounted needle, threaded with medium sized whipcord, is entered from the front of the neck, in the middle line, immediately above the hyoid bone; one feels for the point of the needle with the left finger, as the instrument is pushed through the root of the tongue. In this way, the epiglottis is protected from injury, and nothing more than the lingual tissues are transfixed; then hook up the loop of thread with the left finger, and pull it well through and out of the mouth. Withdraw the needle, liberate the thread from it, and cut through the loop. Now enter the empty needle at the same point of puncture, through the skin only, and pass it subcutaneously to the right, until its point is opposite the upper border of the root of the great cornu. Care must be taken to keep just under the skin, and so avoid the lingual artery. Now turn the point inwards above the great cornu, so as to enter the bottom of the side of the pouch, and feel for the point of the needle with the finger. Thread one of the ends of the cord, which is in the mouth, through the needle, and withdraw. This casts a loop around the right half of the tongue. The left half may be dealt with in a similar manner.—*London Medical Record*, May 15, 1886. *Boston Medical and Surgical Journal*, August 26, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 2, 1886.

TOXIC URINE AND SURGICAL OPERATIONS.

In a recent article, in the *Liverpool Medico-Chirurgical Journal*, of July, 1886, "On Toxic Urine in Relation to certain Surgical Operations on the Urinary Organs," MR. REGINALD HARRISON says that it is impossible to study a series of cases of internal urethrotomy without recognizing that, apart from their surgical interest, they may be regarded as extremely valuable physiological experiments in relation to some unworked-out problems connected with animal chemistry. All surgeons have noticed the frequency with which urethrotomy by the method of introducing a concealed knife within the urethra is followed, within three or four hours, by a rigor, and a subsequent development of more or less pyrexia; that these attacks may be repeated at varying intervals; and that they differ widely in degree, some being very mild, while others are fatal within a few hours. We cannot explain these attacks by referring them to something like reflex action upon a pathological kidney, for the post-mortem examinations have shown that they may occur in patients with perfectly sound kidneys. Nor can the attacks be explained by a supposed traumatic action: "If a man's brain or cord is damaged by a blow or a shock, he shows signs of concussion or nerve traumatism immediately upon the receipt of the injury, and not three or four hours afterwards."

Again, if it be a nerve lesion of the urethra which is the cause of the attack we should see urethral fever occur after the far more extensive nerve injuries produced by lithotomy and other severe operations on the urinary tract. "The improbability of urethral fever after internal urethrotomy, catheterism, and such like, being due directly to nerve shock, is indicated by other collateral considerations which may be noticed. In the first place, we should expect such symptoms to follow Holt's operation for stricture just as frequently and severely as after section of the stricture from within. On the contrary, rigors and fever are far less commonly met with after dilatation with rupture than after internal urethrotomy—tearing or stretching is considerably less productive of urinary pyrexia than incision. In the next place the position of the wound in internal urethrotomy, relatively to the circumference of any given part of the urethra, should hardly be expected to exercise a sort of determining influence in the production of rigors and fevers, if the causation of these effects was a nerve lesion. Yet we find such symptoms more frequently follow when the section is made on the floor of the urethra in preference to the roof. A dependent position of the urethral wound is more likely to be associated with fever than one not so situated. Lastly, we should hardly expect the manifestation of these symptoms to be influenced by mechanical after-treatment if damage done to the local nerves was the cause of the symptoms that followed." But when we analyze a number of cases in which a catheter is worn for a time immediately after internal urethrotomy, and bladder drainage carried out in a thorough manner, we find that a very considerable proportion of these cases escape attacks of urethral fever.

If these effects, asks Mr. Harrison, are the result of nerve lesions, how is it we do not see them following lithotomy and properly performed perineal section for urethral stricture? In regard to perineal section, "the earlier experience of Syme only shows how easy it is to construct a perineal section which proves to be just as ready a cause for rigors and fevers as any internal urethrotomy. In looking over the notes of my earlier cases of internal urethrotomy, it struck me, as being worthy of remark, that neither rigors nor fever showed themselves until after micturition had been naturally practised, or there was evidence that urine had found its way into the wounded urethra and was lodging there." This again is opposed to the idea that nerve lesion is concerned in the production of the attacks, since the symptoms did not appear until urine had come in contact with the wound. These considerations led Mr. Harrison to think that the rigors and fever were symptomatic of poisoning rather than shock; and he determined to test the matter in practice. He resolved to perform a series of operations in suitable cases, in which, though internal urethrotomy was done, no urine would be allowed to remain in contact with the freshly

made wound. This involved an external perineal urethrotomy being done immediately after the stricture had been divided from within. After doing this a number of times he saw that it was possible to produce rigors and fever at will. "So long as the bladder drainage through the external perineal wound was free and uninterrupted, there was invariably a complete absence of rigors and fevers."

It is now proper to ask as to the different conditions under which the surgeon has to deal with wounds which are exposed to the action or influence of urine. "Running healthy urine may be regarded as absolutely innocuous. When it can make its way over a fresh cut surface, or out of a cavity, just as fast and uninterruptedly as it flows over or in, it need cause no apprehension; on the other hand, when it is pent up, as in a wound or space, it is apt to be speedily converted into a most destructive, and, I believe, poisonous agent." The conditions, for the production of urine fever, attending the operation for internal urethrotomy are very favorable. The incision which divides the contraction necessarily paralyses the urethra to a greater or less extent; and hence the process of repair must go on with the wound soaked in urine left behind to stagnate and decompose after each act of micturition—and this is a different matter from the incontinent flow of urine over the glazed and granulating open wound of a lithotomy or a perineal section. "In one case it is merely contact of urine with open spaces, in the other retention, and probably chemical rearrangement, within a space bounded by a freshly made wound. My direction and kind of work led me to believe some time ago that the urine could provide septic material of a kind which seemed to me to have been previously unappreciated in connection with the causation of urinary fever."

Valuable, as bearing on this question, are the experiments and work of Bouchard in regard to the toxicity of urine. Four years ago he showed that alkaloidal substances are constantly present in the urine in some infective disorders; and he showed that these alkaloids are of an intestinal nature—that is to say, they are produced in the intestinal canal by the growth of the vegetable organisms contained therein—and that they are analogous to ptomaines. These alkaloids were subsequently found in normal urine. Bouchard drew, among others, the conclusion that the alkaloids of normal urine represent a fractional part of the intestinal alkaloids, absorbed by the intestinal mucous membrane, and excreted by the kidneys. Two years after his first paper, he determined (in 1884) the effects of normal urine on rabbits, and found that the same doses produced different effects according as the animal furnishing the urine was or was not in health; that the toxicity varied in different individuals; that the symptoms depended on several different substances; that the alkaloids soluble in alcohol differ in their effects from those insoluble in alcohol; that although five or six substances may be present, they may be arranged in two groups, a *convulsive* and *narcotic*; and he concluded that the symptoms in different cases of uræmia may be explained by these groups being present in varying proportions. The symptoms of urinary toxæmia from the introduction of urine into the veins of rabbits are, in the order of their occurrence: 1. Contraction of the pupil. 2. Acceleration and diminished amplitude of the respiratory movements. 3. Increase of urine. 4. Fall of temperature. 5. Diminution and finally abolition of reflexes. 6. Convulsions usually with coma, and 7. Death; the action of the heart and the electro-contractility of the muscles persisting for a time after death. The fall in the temperature is due not to increase in the loss of heat but to a diminution in heat production. Bouchard calculates that a man excretes enough poisonous matter by the urine to kill himself. "During eight hours, if asleep, only from one-quarter to one-half as much poison is excreted as during the same period when awake. If the whole day be divided into three periods of eight hours each, the proportional quantities of poison excreted are—sleep, 3; early waking period, 7; late waking period, 5. The urine of the sleeping and waking hours also differs qualitatively as well as quantitatively. The alkaloid of the urine of sleep is *convulsive*, that of the waking urine *narcotic*. The urinary poisons of the sleeping and waking hours are not only different, they are physiologically antagonistic. Fasting increases the toxicity of the urine, probably because then the individual lives on his own tissues, and these are relatively more difficult of oxidation than the ordinary food, and are less completely oxidised. Labor greatly diminishes the toxicity of the urine, as does also the breathing of compressed air." Why are these symptoms not produced when urine, after ammoniacal, is subcutaneously forced among the tissues, sometimes in large quantities, as in cases of stricture and sudden urinary extravasation? "The conditions attending subcutaneous urine extravasation are essentially different from those associated with the continuing contact of urine with a wound in the urethra, as in internal urethrotomy. A mixture of blood and urine seems to be capable of producing very different compounds from those that extravasated urine

alone is likely to yield. Nor are we entirely to lay aside the consideration, that whatever *materies morbi* may be found at the seat of the wound by the conjoined decomposition of stagnant blood and urine, its entrance into the circulation must be favored by the contractile power of the bladder from behind. Again, when urine is extravasated amongst the tissues, its action is that of a virulent local poison, under the influence of which the contiguous tissues are killed outright, probably before they can exercise any power of absorption. Such a conclusion seems likely from some of Mensel's experiments, where putrid and normal urines were subcutaneously injected into various parts of the body." But why is it that the same symptoms have been produced in sufficient intensity to cause death within a few hours, when there is no evidence to show that the urethral walls have been lacerated by the catheter or bougie? There may be no external evidence of laceration, but it is extremely likely that some lesion has been produced. Mr. Harrison has frequently drawn attention to this point, and has shown how readily false conclusions in reference to it may be drawn.

THE ORGANIZATION AND PRACTICAL WORKING OF THE SECTIONS OF THE AMERICAN MEDICAL ASSOCIATION.

In giving a brief account of the recent meeting of the British Medical Association at Brighton, in THE JOURNAL of September 25, we stated that there were some things in the practical working of the Sections that might be profitably imitated, or even improved upon, in the Sections of the American Association.

Among these were, more care in the early and complete preparation of papers and their announcement in the columns of the *British Medical Journal* a considerable time prior to the annual meeting, thereby making it possible for the officers of each Section to arrange for a more profitable discussion of all the more important topics to be presented. To accomplish these results requires no change in the by-laws or organization of the Sections of our Association, but simply a better appreciation of the duties devolving both upon the officers of the Sections and those who prepare papers. It has been too much the custom for the officers of each Section to rely entirely upon the voluntary or unsolicited contributions of members, and to give no notice of such contributions as are offered until they are announced in the programme prepared by the Committee of Arrangements and furnished to members at the registration table. Instead of this it should be regarded as one of the most important duties of the President and Secretary of each Section, as early as possible after their appointment, to select at least three topics (one for each day's session) of importance and practical interest belonging to the Section, and to secure specially qualified members to present these subjects at the next meeting, and one or more equally qualified members to lead in the discussion of such topics. This would in no wise interfere with the acceptance of voluntary papers from any other parties who might offer them in due time, but it would be quite certain to secure something of special interest for each session of the Sections. And if the principal topics thus selected should be announced in the Journal of the Association one, two, or even three months before the time of the annual meeting, it would attract the attention of many, excite more investigation, and result in a much more constant attendance in the sessions of each Section. We respectfully invite the attention of the officers of the several Sections to this subject, with a view of promoting the interest and importance of the meeting of the Association in Chicago next Spring.

"DEADLY SANITARY PLUMBING."

Under this somewhat paradoxical head the *Chicago Tribune*, of September 12, steps from the world of science and fact and revels in the unlimited fields of ignorance and imagination. Without stopping to show how plumbing or anything else that is deadly can be *sanitary*, the writer of that editorial stumbles through a mass of misleading, weak and easily disproved assertions, to finally reach the conclusion (the only statement in the whole editorial which cannot be easily disproved) that "in those portions of Chicago where there is the least plumbing there is the least sickness arising from its effects;"—which is equivalent to saying that in those countries in which there are no railways there is no danger of being killed by a locomotive. But why limit the statement to Chicago? It is equally true of Hong-Kong.

"As at present constructed," says this remarkable editorial writer, "plumbing is simply an easy arrangement for the conveyance of the gas from bath-rooms, and water-closets, and sleeping-rooms, not to speak of the basins themselves, which assist in the deadly work (of carrying *off* the gas?). Where there is no plumbing to connect them (the water-closets and basins?) with the street sewerage there is no trouble from the gas." The greatest and most important discoveries are sometimes stumbled upon by accident, and sanitarians and plumbers have worked and waited for many years, only to have the real use of plumbing discovered by a "deadly sanitary" writer.

There has long been a popular superstition that plumbing was for the purpose of conveying waste water, slops and sewage from bath-rooms, water-closets and sleeping-rooms to the street sewers; but the *Tribune* has exploded this fallacious idea. The *Tribune* seems to think that "the gas" is generated in the wash-basins and bed-rooms, and yet complains of the plumbing for being "an easy arrangement" for conveying it away; the wash-basins themselves being accessories in the "deadly work of conveying the gas away." Here again is another new scientific fact: "Where there is no plumbing to connect them (bath-rooms, water-closets, sleeping-rooms and wash-basins) with the street sewerage there is no trouble from the gas." The fact is, it is just under this circumstance, or when the plumbing is defective, that there is trouble from the gas. If the plumbing and drainage of the *Tribune* office be in accordance with the unsanitary ideas of the editor it should be inspected by the Health Department.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Sept. 6, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. J. S. JEWELL gave a partial verbal abstract of his paper on

OVERFILLING AND DILATATION OF THE COLON.

He said that for the last ten years this subject had attracted more or less of his attention. During the last eight or ten years he had accumulated a list of over five hundred carefully studied cases, in which the condition named existed and concerning which he gave his observations. His mode of investigating the cases in which the overfilling existed has been as follows: The patient is stripped so that the abdomen is bare, the abdominal walls being relaxed. Then he takes a plate of soft rubber at least two inches in length by an inch and a half in breadth and one quarter inch in thickness, and a heavy steel hammer, quite as heavy as the ordinary surgical bone hammer. With this the abdomen is carefully percussed over the track of the colon, from its origin tracing it up under the liver, across and down to the sigmoid flexure. Thus percussing over the track of the colon and carefully locating every mass of fæces, (even in persons with fleshy abdominal walls) he has been able to get at its course and contents. Out of these five hundred cases, perhaps a hundred have said that they were as "regular as clockwork" in having movements from the bowels. But upon examination, in most such cases the colon was found to have variable quantities of fæcal material lying in it. The part of the colon most subject to dilatation is the sigmoid flexure and the descending colon. At the flexure of the colon, deep in the left hypochondriac region, almost as frequent as in any other part of the course of the colon, he had found it dilated and filled with fæcal matter. The next most common situation is the transverse colon, last of all the cæcum. In one case where the colon was very largely dilated, during the thirty or forty hours that were devoted to emptying the same (not continuously but at different times) two gallons or more of material were removed. The common way is to find masses of fæces lying in lumps here and there, not filling the entire intestine.

In one case a mass was removed from the right extremity of the colon by massage, and flooding the colon its entire length with water. The fact that this mass had remained in the colon for more than nine months was ascertained in this way: The patient had taken a dish of dewberries such as appear in the fall after the ordinary blackberry has passed its season. He was in ill health, and growing worse during his visit returned home. This was in September. Dr. Jewell saw him early in June following. When the mass was removed it was found to be more or less filled with the seeds of the dewberry, and according to his own account he had not taken berries of any kind since the September previous, certainly no dewberries. This mass was about the consistence of soft putty and the size of a large Irish potato.

In most cases investigated the colon was dilated apparently, in some part or other, all the way from two to three times its proper caliber. This class of patients are all liable to become "bilious" and are habitually taking cathartic pills, mineral waters, etc. In every or nearly all instances, Dr. Jewell could trace their "biliousness" to gradual filling up of the colon, and the disturbance produced from this cause in the digestive apparatus higher up. The change in the secretions of the mouth, the bad breath, the unhealthy odor of the skin produced by absorption of fœtid substances from the rotting masses in the intestine together with the coloring matter in the same, gives the skin of the patient a peculiar dirty sallow color. One of the first things to occur in addition to the dilatation, and weakening of the muscular coat of the colon by accumulation of material in it, is irritation of portions of the mucous membranes were the fœcal masses lie, producing local catarrhs. This occurs with a frequency and to an extent that no one would suspect, unless they set the patient or nurse to carefully watching the stool. The next important factor in these cases is irritation of the peripheral ends of the sensory nerves of the intestinal mucous membrane, irritated by contact with the fœcal masses. The nerves that return from the colon probably enter the spinal cord, at a level not lower than that of the tenth or eleventh dorsal vertebræ. Above the level named they probably enter the cord at various points higher up in the lower two-thirds of the dorsal cord, not to mention direct medulla connections, etc. Along these nerves are propagated the irritative impressions from the colon into the spinal cord or medulla, and thereby "switch" connections outgoing or reflex impulses are sent to other portions of the body,

producing thus various forms of disorder to be referred to later. He believes that he has not found one case out of twenty of ordinary melancholia that has not had its origin partly or in some cases apparently entirely in overfilling of the colon. Headache and a great many transient disorders referred to the head more frequently owe their origin to this source than he had ever supposed. Next is the influence upon the circulation in general, especially upon the heart's action, lowering its tension, and thus giving a feeble pulse.

Dilatation of the colon often causes a sluggish capillary circulation, and this accounts for the frequency with which patients complain of cold extremities. Dr. Jewell has found patients who could not remember having had naturally warm feet for years, when upon removal of the masses in the colon the feet would become warm. In insomnia he has found the condition of the colon described to be a frequent cause, the colon being the seat of the original disorder. There is lowering of the vascular tension nearly always in these cases, hence the feeble nutrition and feeble circulation in the brain, not to mention other parts. The next most important result of dilatation and overfilling of the colon is the fact that these masses of retained fæcal substance in various ways poison the individual, by absorption of septic material. He has had three cases of epilepsy that he traced exclusively, as far as could be told by the results of treatment afterwards, to disease in the left extremity of the colon caused by fæcal accumulations, and when the disorder was removed by proper means he was able to relieve the epilepsy. For the removal of these masses, as a rule, he does not use purgatives, but injections are given after the following plan: A large bag fountain syringe, holding half a gallon is adjusted at a convenient height from the floor, the patient lying down in the knee-chest position. The fluid should flow with considerable force until it makes its way past the upper sphincter which is at the lower part of the sigmoid flexure; pass one quart to one-half gallon of water, according to the size of the colon, so as to fill the entire organ to the cæcum. In some instances he has been able to introduce as much as a gallon of water into the colon, the patient feeling no serious inconvenience from it, and a half gallon is a common amount to introduce. The patient is then directed to lie down on the left side, and by proper massage over the ascending colon the liquid is moved and with it the contents of the bowel, toward the rectum. This should be done once or twice in the twenty-four hours until the colon is clear, and by this means it should be kept so. After this has been accomplished give the patient something that will act as a stimulant to the nervo-muscular coat of the colon. A good prescription for this purpose he has found should contain in pill or capsule form extract of cascara, a little belladonna, strychnia, hydrastis canadensis and aloes. By care the colon can be kept clear, and the disorders of the stomach usually disappear, the secretions of the mouth are improved, the skin becomes of a healthier color and loses the distinctly fæcal odor that it frequently has.

He has met with a number of cases of so-called typho-malarial fever in their earlier stage with a temperature as high at times as 103–4–5, in which, by removing a great mass of material undergoing rapid fermentative decomposition at the high heat of the body, leading to rapid distension of the colon with gas, the signs of disease abated in a few hours and rapid recovery occurred. Where there is considerable inflammation in the bowel itself he introduces water pretty well charged with listerine or some other antiseptic, and a little glycerine or other medicinal agents, and in this way the intestine is purified and cleansed and the individual immediately improved. It seems now astonishing that it never occurred to him earlier, that to have a mass of fæces undergoing fermentation and decomposition in the interior of the body, and in contact with an absorbent surface like the colon mucous membrane is or may be often the real cause of serious diseases.

Dr. H. A. Johnson in opening the discussion said: This is a subject to which I have given no special attention, but perhaps if I propose one or two questions it may elicit some information. First, the inquiry suggests itself to me as to why this state of things exists, what is the cause of it? Perhaps as the author has suggested our rapid mode of eating, and our neglect of the natural demands of the functions of digestion have something to do with it, but this does not seem to me to cover it all. Secondly, the question arises in my mind as to how far such a state of things as he describes does actually exist in the colon, viz., putrefaction of the contents. So far as my observation goes the contents of the cavities of the body, including the alimentary canal and bladder, are kept from undergoing these putrefactive changes while they are inclosed. It is true that the fæcal matters are full of bacteria in various forms, but I am not sure that the ordinary processes that take place out of the body, go on here. Thirdly, as to the function of the colon; it is both an excretory and secretory organ, and nutritive matter that are carried into it are undoubtedly taken up in their passage through it. There should be a delay, a normal arrestation of the progress of the fæcal mass from the time it enters the colon at the cæcum till its discharge. In the normal condition the fæcal mass is made up of the debris, of the waste matters of food, and the material removed from the blood; there ought to be, physiologically a retardation—time for the accomplishment of these two functions. What is that time?

Dr. Wm. E. Clark said: The subject before us is one of great importance, and one to which I have given much thought. My first call in consultation, after my return to the city some twenty years ago, was to a female patient who had been an invalid for a number of years. A tumor could be felt through the abdominal walls, supposed by the attending physician to be a tubercular enlargement of the mesenteric glands, but which proved to be a mass of fæcal matter in the colon. It had probably been accumulating for a long time, as after removal it was found largely to consist of bran from Graham bread—her principal diet for several years previous. Under ap-

propriate treatment, with particular attention to the condition of her bowels, the patient apparently recovered her health, though she died some years after with disease of the kidneys—the latter perhaps having some relation to the previous condition of the bowels.

Again, to-day I made an examination of a supposed uterine tumor, and found a tumor but not connected with the uterus—but an accumulation of fæcal matter in the colon, and consequently have made arrangements for its evacuation. For the removal of these masses of fæcal matter, I first gave cathartic with large doses of olive oil and then use injections of water into the bowel as far up as possible through a stomach tube; sometimes resorting to the placental forceps for the removal of large fragments.

DR. G. C. PAOLI said: I have listened with a great deal of interest to my learned friend to-night. We know that expansion of the colon occurs in many different diseases and there is hardly a practitioner who has not seen it in his practice for years. We see it in typhoid fever, nephritis, hysteria and lead colic. Constipation is undoubtedly a great cause of expansion of the colon. A man gets constipated, neglects himself, his fæces become very hard and in consequence pains occur in the colon. With due respect to the author's experience and observation, he must admit that although we meet with cases in our practice they are not so common that we see them in the hospital. In regard to the treatment, we ought to administer such remedies as will give tonicity to the muscular coat of the bowels, such as cascara sagrada in combination with small doses of aloes. But without physical exercise medicine has very little beneficial effect. I have seen a shower bath over the abdomen have a good effect in producing contraction and tonicity of the muscular coat of the bowels. In regard to the injection which the author advises, it is well to remark that the rectum should first have a digital examination, because often hard excrement is impacted in it and under such circumstances the injection would meet with an obstacle. Strychnia may be very good in chronic but not in acute cases.

DR. JEWELL, in closing the discussion, said: The members of the society will of course understand that I have spoken only of the sick people who have come to me, a special class that is not met with so frequently in general practice. I am speaking entirely within bounds when I say that the number of cases that I now have on my record in which overfilling of the colon was one of the principal features of disorder, must be 700 or 800 during the last ten years, and 500 of these have been made the basis of my study. The question as to how long the matter may be left in the large intestine without harm is to me exceedingly interesting, and I have made that a study. The difference between the ordinary slow decomposition of fæcal matter in the intestine and unhealthy decomposition, I have taken into account in my study, as well as the conditions or causes that bring about unhealthy decomposition. I am convinced that not enough stress is laid upon this subject. Many persons in the condition I have referred to have been all but ruined by taking by the week, month and year, cathartics, which must be taken into the stomach first, dissolved and go the entire length of the small intestine before they reach the colon. The colon may be emptied in a much more satisfactory way by means of large injections, together with the use of medicinal agents, to stimulate naturally its weakened muscular apparatus.

DR. A. SCHIRMER reported a case of

ACTINOMYCOSIS HOMINIS,

with exhibition of patient and specimens of actinomycosis.

Frank P., a Pole, 25 years old, married, laborer in a lumberyard, has been five years in this country. No hereditary disease in his family. His occupation in the old country was farming during the summer months and during the winter months he attended to barnwork. He never was sick and never had the toothache. In his 18th year, while chopping wood he received an injury on the chin, which produced a bleeding wound. No medical attendance was necessary at the time. Shortly afterwards he noticed a swelling on both sides of the lower jaw. The swelling of the right side disappeared in a few days, but that of the left side remained three months after the injury. He was obliged, on account of pains, to consult a physician who injected at different times a clear fluid into the swelling. These injections were very painful. Shortly after the injections the skin turned white, and in the course of a few days it broke open and discharged a little pus. Later on the discharge of pus increased, the fistula remaining open. After that time the patient was not able to fully open his mouth. Three years ago, on account of a severe cough, he was unable to work for one week. From that time on he was able to work until last May, when on account of weakness, pains and stiffness in the neck, he was obliged again to quit working. At the end of July Dr. Schirmer saw him at his house. He complained of severe pains in the left side, and stiffness of the neck, being unable to move his head. He was feverish, pulse and temperature increased. He also had some cough; no appetite. Two days afterwards the opening of the fistula was enlarged and several small pieces of necrosed bones extracted. At the same time Dr. Schirmer opened an abscess situated between the jaw and the shoulder on the left side which discharged about one tablespoonful of a thin, serumlike pus, in which were sandlike granules of a greyish-yellow color. The opening was enlarged, and by digital examination and with the sound it was found that the crown of the abscess had no connection with the surrounding tissues. The abscess was superficial and did not extend into the deep layers. After this operation the patient could open his mouth better; ten days afterwards another abscess was opened on the right side of the neck. It discharged almost four tablespoonfuls of pus. The pus was thicker and the granules were considerably smaller than in the abscess of the left side. The skin was hard.

His cough and expectoration have become gradually worse. His appetite and sleep have also failed. For the last ten days he complained of severe pains in the right arm. A microscopic exami-

nation of the pus confirmed Dr. Schirmer's suspicions regarding the character of the disease, who found in the contents of the abscess actinomycoses. He also found actinomycoses in the sputum. Prof. Fenger, to whom he had given some of the contents of the abscess, also found actinomycoses.

Dr. Newkirk asked if the patient knew of any disease among the cattle he attended.

Dr. Schirmer: He said there was no disease among the cattle, and nobody else had such a disease.

Dr. W. T. Belfield said: The case is hardly one for discussion, because Dr. Schirmer has not said anything about actinomycoses as such, but merely about the case. The finding of actinomycoses in the sputum is very interesting, it is undoubtedly a case of actinomycoses of the lungs and must prove fatal. There are only some thirty cases recorded in which this parasite has been found in men. I am not familiar with the literature on the subject for the last year, but up to that time there had been no well authenticated case of actinomycosis observed in man either in England or America.

Dr. A. V. Park read a paper on a case of

CARIES OF THE RIGHT PARIETAL BONE CAUSED BY RAILWAY INJURY.

The patient was a stout German boy, aged 16, who was injured September 18, 1883, sustaining various lacerations and contusions on the body, besides a V-shaped wound over the left ear and a circular wound nearly over the centre of the right parietal bone. No fracture of cranium was discovered, although at the request of Dr. Park the case was examined by the family physician and the railway surgeon on different occasions. Patient exhibited signs of collapse and rallied slowly. Erysipelas ensued. After fourteen days the boy commenced to regain consciousness, but could not distinguish one person from another, nor remember events which occurred only a few hours before. It was over a week before he had complete control of his senses. Seventy days after the accident a piece of exfoliated bone, size of three cent piece and thickness of external layer of cranium, was removed from wound over right parietal bone. More dead bone was detected, and ninety-two days after the injury an area of two and one-half inches in width by three and one-half in length of diseased bone was removed, the bone being removed down to the diploë. Erysipelas again ensued and lasted about one week. One hundred and fifty-one days after the injury the patient was discharged, with partial deafness of the left ear and impaired vision of the left eye, as the only unfavorable results of the injury. Dr. Park gave as the result of his observations of railway injuries the following conclusions: 1. Sloughing is the rule in contusions and lacerations. 2. Hæmorrhage may be little, but is apt to be great in injuries to head, or extremities where large vessels are lacerated. 3. Examination of wounds should be thorough, and is best done during period of shock. 4. Shock may be excessive and death ensue rapidly, or reaction take place slowly with symptoms of collapse. 5. Amputations are attended with high rate of mortality, owing to liability of stump being attacked by erysipelas, osteomyelitis, sloughing, or pyæmia ensuing. 6. Erysipelas may ensue rapidly and must be manfully combatted. 7. A large majority of persons injured on railways recover but partially. The sequelæ may be paralysis, insanity, loss of memory, impaired vision, deafness, etc. These results may follow immediately, or not appear until months or years after the injuries were inflicted.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, August 20, 1886.

The Vice-President, Henry T. Byford, M.D., in the Chair.

W. W. Jaggard, M.D., Editor.

Dr. W. W. Jaggard exhibited

AN OVUM CORRESPONDING TO THE FOURTEENTH WEEK OF PREGNANCY, SHOWING TWIN PREGNANCY, WITH ONE PLACENTA, ONE CHORION, ONE AMNION, BOTH EMBRYOS OF THE MALE SEX.

The interesting specimen was placed at his disposal through the courtesy of Dr. Daniel H. Williams, of Chicago. The egg corresponded to the fourteenth week of pregnancy. It was a case of twin pregnancy, with one placenta, one chorion and one amnion. The embryos were equally well developed and were of the male sex.

The case illustrated one of the modes of origin of multiple pregnancy. An ovum may have two nuclei, and an embryo may be produced from each nucleus. Under these conditions, the fecundated ovum has one placenta, (or there is anastomotic communication between two fused placentæ), one chorion and two amnions. The amniotic septum may be broken down or absorbed, and the embryos may be contained in a single amniotic sac, as in the specimen exhibited.

In a case of single placenta, or fused placentæ with anastomotic communication, and a single chorion, the twins are always of the same sex, (Hyrtl, Spaeth, Braun).

Dr. John Bartlett read a paper, entitled

A PROPOSED MODIFICATION OF PORRO'S OPERATION.

After giving a concise history of the classical and Porro's operations, Dr. Bartlett said:

The substitute for Porro's operation which I have to propose is as follows: The operation proceeds as in Cæsarean section till the child is removed, the actual cautery being used in opening into the womb. Then, instead of dragging the womb out of the abdomen through the dominal incision, it is dragged out of that cavity through the vagina. The operator passes a Well's clamp, somewhat modified in its prehensile surfaces and properly curved in coincidence with the parturient canal, to the fundus of the uterus and there secures a firm grasp into the uterine tissues. By traction upon these forceps, and pressure, and suitable manipulation from above, the fundus of the uterus is depressed into the body of the organ, dragged through the cervix into the vagina to produce complete in

version. The clamping wire is immediately adjusted, and excision of the uterus and appendages effected at a suitable distance from the vaginal junction. The abdominal wound is closed, and attention is given to the stump in reference to hæmorrhage as in Porro's operation. In lieu of the clamping forceps, in some cases it would answer better, doubtless, to pass a loop of copper wire through the walls of the uterus to be caught upon a suitable instrument, as a rod possessing the flexibility of block tin or solder, passed *per vias naturales* to receive it. The advantages of this operation over Porro's method which suggest themselves are: *First*, that the abdominal cavity is thoroughly closed; the abdominal incision, not being embarrassed by the presence of the large pedicle is as perfectly and as quickly closed as in any other laparotomy. By the process of inversion the pedicle is placed outside of the abdominal cavity, while what may be termed the uterine inlet made into the peritoneal sac is closed by the clamping wire opposing serous surface to serous surface, thus offering the best prospect for speedy and certain agglutination and closure. *Second*, the relation of the parts in the suggested procedure are much more natural, and much less strained than in the *status* in which Porro's method leaves them. *Third*, in the event of drainage becoming necessary in the course of treatment, the effecting of an opening for a tube in the plan proposed can be accomplished very much more easily and safely than in Porro's plan and the tube being introduced, its situation and direction would be the best possible for thorough cleansing of the cavity to be washed.

Serious objections at first thought will occur to the mind of every gynæcologist. These will be here stated and subsequently met, as well as may be, by considerations that may be urged in answer to them.

First.—Of all the accidents *post partum* none is generally accredited with so violent a shock to the patient as the very condition which is here made a main feature in a method proposed as conservative. In the old, and in Porro's operation it almost always happens that, either with or without the partial or complete separation of the placenta, the uterus contracts. With such a condition of the uterine walls inversion would prove difficult and sometimes probably impracticable. Hunter said a contracted uterus was as difficult to invert as a jack-boot. When to these difficulties incident to the first step of the operation are added the shock from clamping and incising the uterus, it would seem that the dangers incident to the method proposed might exceed those of the Porro operation.

Second.—In Porro's operation, as in the old Cæsarean section, danger begins from hæmorrhage at the moment of incising the uterus, and in the method proposed this danger would be so much the greater as the time elapsing between the two events, incision and snaring of the pedicle, is longer. In the established operations in at least one-sixth of the cases the placenta has been encountered directly in the line of incision. In such instances the bleeding from the double wounds, uterine and placental, would, in an especial manner, embarrass the operator and endanger the patient.

Third.—It must be remembered that in the great majority of cases in which the operations under consideration are undertaken there exist contractions of the pelvis, which may seriously interfere with the main step of the operation, inversion of the uterus.

Fourth.—Apart from these more serious objections it may be urged against the plan by inversion that dilatation of the *os uteri*, a *sine qua non* of the method proposed, does not always exist at the time of operation, and that it may not always, or even often, be practicable safely to effect it.

These objections will now be considered seriatim. As to the first, regarding the shock to the system so often reported in association with inversions, it may be stated that associated with inversion also is very generally hæmorrhage, and to this all-powerful cause of depression may be ascribed much of the shock noticed in cases of inversion. While it must be admitted that in some instances inversion alone, entirely unassociated with bleeding, seems to have produced great shock, and even death, it may yet have happened that in some of these cases, other injuries, as laceration of the uterus, accompanying the inversion, may have been partly responsible for the profound impression observed, and one is the more justified in assuming that this objection may be over estimated, from the fact that in a number of cases carefully observed and reported, inversion has produced no shock whatever, and has in fact been accomplished without the knowledge of either the patient or obstetrician.

Blundell, Dailliez, Dugé, Crosse, Lee, were quoted to support the proposition that shock *per se* is not the cause of alarming symptoms or death, in inversion of the uterus.

By reference to veterinary surgery, cases may be adduced to show not only that uterine inversion among animals is not *per se* especially dangerous, but that inversion, complicated with accidents in themselves accounted most dangerous, is not necessarily fatal. In such cases reposition alone, unaccompanied with any care for existing uterine lacerations may be followed by perfect and speedy recovery. In support of this proposition, cases were cited from the writings of J. Rainard, Guillamin, Gellé, Elevout.

As to the objection regarding the difficulty of inverting the uterus after contraction, it must be admitted that contraction of the uterus into a firm body would certainly render more difficult the inversion. The facility with which the flaccid uterus may fall into itself like tripe, or a wet bladder or the finger of a glove, certainly contrasts strongly with the difficulties encountered by experts in restoring the inverted uterus, even as early as four hours after labor. In the absence of any experience in the matter of purposely inverting the uterus, it will be necessary in support of the practicability of this feature of the proposed operation to draw upon experience derived from practice in midwifery. A variety of facts may be brought to bear to show the likelihood of success in efforts at inversion which may be in a measure classified thus: direct facts as to the ease with which it has been accomplished directly after labor; facts showing the readiness with which from trifling causes inversion may be induced within a few weeks after

labor; facts seeming to show that it may even occur in the virgin uterus, and apparently from minor causes. Replacement of the uterus after inversion, whether that organ be lax, moderately condensed, or in a state of complete involution, is an act so nearly akin to that of inversion that any facts tending to indicate the facility with which an inverted uterus may be restored to position have a bearing upon the question of the practicability of inverting the uterine tissue. Hence in the category of available facts for our present purpose belong those showing facility, or possibility of reduction of the inverted womb at any stage or condition of inversion. Referring to inversion, Barnes, Hunter, Byford, Gooch, Boivin, Dugé, Baudelocque, Radford, Cowan, J. T. Simpson were quoted to prove (1) the ease with which inversion has been accomplished directly after labor, (2) the readiness with which from trifling causes, inversion may be induced within a few weeks after labor, (3) that inversion of the uterus may even occur in the virgin uterus. Facts were adduced to prove the ease with which even the chronic inverted uterus was restored. Fraenkel's experiments with atropia, morphine, and chloroform in cases of spastic contraction of the uterus in the second or third stage of labor, were suggestive.

This combination recommended by Dr. Fraenkel, injected into the *cervix uteri* at the proper moment before the operation, might be relied upon to antagonize any excess of contraction of the uterus which experience might show to interfere with the efforts of the operator to invert the uterus.

In regard to the objections having reference to hæmorrhage from the uterine incision, it will be observed that in the plan proposed, the incision through the uterine walls is made with the cautery. While it is probable that the protecting power of this agent would guarantee the arrest of the bleeding from the uterine wound for a time under conditions of rest, it must be admitted that, in subjecting these seared edges to the changes of relation incident to the process of inversion, there would be danger of re-opening the vessels and loss of blood. In such a case the assistant managing the thermo-cautery would follow the edges of the wound with the purpose of retouching bleeding points when practicable. That the actual cautery will arrest the hæmorrhage from the uterine wound, even under circumstances of change in its size, etc., the following facts prove.

R. W. Felkin, Breitmann, Playfair, Baudelocque, Edmunds, James Whitehead, Robert P. Harris, Fancourt Barnes were cited in support of the proposition that hæmorrhage is rarely the cause of death.

In regard to the third ojection having reference to the narrowing of the pelvis, and the difficulties in the way of the suggested procedure thereby presented, it may be stated that while narrowing of the pelvis would always prove more or less of a hindrance, yet it must be borne in mind that in the majority of cases of deformed pelvis, however much any given diameter may be shortened, there yet remains spaces to one or the other side of the narrowing line through which the womb might be made to pass by the *vires a fronte et a tergo*. Generally in the process of inversion, as the uterus would be drawn through the superior strait, four thicknesses of the organ would be presented at the conjugate; and in cases of unusual narrowing, difficulty might be experienced in this manœuvre. In extreme contraction of the pelvis, dexterity and ingenuity on the part of the operator might enable him to cause the organ to pass in the process of inversion a very narrow space, possibly no wider than twice the thickness of the uterine parietes. Thus by making the incision, where practicable, near the fundus the fold formed by one lip of the wound and its apposed surface of uterine wall might be made to pass; to be followed by a similar fold of the corresponding edge of the incision.

Stein and Wiegand recommend that after the operation of Cæsarean section if the uterus does not contract so as to sink into the pelvis, it shall be seized by the whole hand, as in taxis for hernia, and be pressed down into the pelvis. In a narrow brim, this procedure, they think, insures that the uterus once pressed into the pelvic cavity cannot rise out of it again. Spitzbarth makes a similar suggestion. These recommendations of practical men suggest the feasibility of inverting the uterus by adroit manipulation even in cases of marked contraction. It may as well be stated, however, that the plan of operation here proposed has its limits of practicability as compared to the Porro operation, cases of extreme pelvic obstruction as well as those involving such changes in the parenchyma of the uterus as would render inversion dangerous, if not impracticable would, of course, not fall in the category of those to which the method here suggested might be applicable.

In regard to the fourth objection as to the hindrance presented by a non-dilated *os uteri;* it may be said that according to the majority of authorities, the most favorable time for performing Cæsarean section is after labor has set in, and should interference be delayed till the *os uteri* were softened and ripe for dilation in the greater number of cases the delay would not prove injurious to the mother or child.

With the present means of dilating the cervix during labor, it is to be presumed that while an imperfectly dilated os would not unfrequently prove a hindrance it would not often be an obstacle in the way of the proposed operation.

Barnes, Thomas and Lusk were cited to prove the ease with which the cervix uteri might be dilated.

It may be inquired, what would be the relation of the ovaries to the proposed line of ligature in an inverted womb? Several writers refer to the ovaries as resting on the edge of the inverted uterus as if about to fall into the cavity. A specimen from which this statement has been deduced forms the original of one of the standard cuts representing that condition. It is a case of partial, not of complete, inversion. Some authors, as Boivin and Dugé, state that the ovaries are not within the cavity of the uterus. Other writers, as Levret, report cases in which the ovaria were found within the inverted cavity. Schultze states that they are there found, and the cut that accompanies his text so shows these organs. In a number of instances, recent and old, the amputated uterus has been found to contain one or both ovaries. In

many cases of chronic inversion the appendages have not been found within the cavity of inversion. A study of the relation of the ovaries after complete inversion of the uterus will lead to an indorsement of the statements of Winckel and Schroeder as correct. Winckel writes, "In puerperal inversion, as a rule, the tubes and ovaries fall into the cavity (of inversion.)"

Says Schroeder, "In recent puerperal inversion all of the appendages are in the uterine funnel."

In the records of medicine are not wanting quite a number of cases the history of which teaches that the plan of operation here proposed may not be fatal. Cases were cited from the works of Demmé on "Uterine Inversion" to prove the latter proposition.

In conclusion, Dr. Bartlett said: Mr. President: In the course of my researches in preparing this paper, I have looked expectingly for the presentation of the same proposition as I have here made from co-laborers in the field of obstetric surgery. I have been rather surprised to have met no allusion to the method. The germ of the plan here proposed may however be found in the writings of that brilliant obstetrician to whom more than any other, suggestions for improvement in the operation of Cæsarean section are to be credited, James Blundell. In his article on laceration of the uterus occur these words: "Would extirpation of the uterus, *with or without inversion*, be of service in these cases? This question may be answered next century."[1]

DR. A. REEVES JACKSON said: I have never performed Porro's operation and am not sufficiently familiar with the literature of the subject to be a proper person to open, or even take part in the discussion. I confess I scarcely understand what advantages this operation proposed by the essayist offers over the improved operation by Sänger. I would like to know whether Dr. Bartlett has performed this operation either upon the living subject or the cadaver. It seems to me there are practical difficulties in the way. In a review by Harris, of Philadelphia, in the *American Journal of the Medical Sciences*, of the work of Mangiagalli "On the More Recent Modifications of the Cæsarean Section," it is stated that it had been proposed to invert the uterus; for the purpose, however, of lessening the danger from septic infection, and not to facilitate the amputation, as is designed by the suggestion of Dr. Bartlett.

DR. E. J. DOERING asked how often the Cæsarean operation had been performed in Chicago.

DR. W. W. JAGGARD thought Dr. Bartlett's paper a very ingenious essay, although not based upon sound surgical principles. In the first place, he thought the title of the essay a misnomer. The operative procedure proposed by Dr. Bartlett was not in any sense of the term a modification of or a substitute for Porro's operation. It was a perfectly distinct operation. Dr. Bartlett's method offered no advantages over Porro's operation, as modified by Müller and others. The abdominal cavity is not more thoroughly closed. The presence of a large pedicle does not embarrass the closure of the abdominal incision. The relation of the parts in the suggested procedure are not more natural and much less strained than in the *status* in which Porro's method leaves them. Drainage is entirely unnecessary when Porro's operation has been skilfully performed.

On the other hand, the positive disadvantages are numerous: The dangers of shock and hæmorrhage in artificial inversion of the uterus has been very much underestimated by Dr. Bartlett. The cases, collected from the literature of the subject, when they were at all relevant, were questionable as to authenticity. Accidents occurring to the uterus among the lower animals could not be adduced in evidence as to what would be the probable effect apon human beings under similar conditions. The thermo-cautery was inadequate to the arrest of hæmorrhage from a large incision through the walls of the pregnant uterus.

The uterus could only be inverted with ease, when it was pathologically flaccid—an exceptional condition. Porro's operation was performed in cases of the simple, flat rhachitic pelvis, when the antero-posterior diameter of the brim was 6 cm. or under. Above 6 cm. craniotomy or the forceps is indicated. It would be very difficult to invert the uterus through the conjugata, oblique or transverse diameter under such conditions. In the pelvis of Robert, or in the osteomalacic pelvis, in which the degree of contraction is usually higher, artificial inversion of the uterus would be wellnigh impossible.

Then amputation of the inverted uterus is a dangerous operation *per se*. Of the forty-eight cases collected by Dr. West,[2] twelve terminated fatally. Of fifty-eight cases of amputation of the inverted uterus, reported from a German source,[3] eighteen terminated fatally. "In[4] 106 cases of amputation by ligature and otherwise, over 31 per cent. of deaths occurred." But it is not necessary to multiply statistics. So great is the mortality of this operation, that A. Martin[5] has proposed as a substitute the total extirpation of the uterus.

If, then, upon *à priori* grounds Dr. Bartlett's suggestion has no real advantages over the modified Porro operation, and, on the other hand, possesses actual disadvantages, it is scarcely probable that the expedient will receive serious consideration.

DR. J. SUYDAM KNOX said: Dr. Jaggard has about covered the objections I intended to make. My impression is that Dr. Bartlett in his paper has overestimated the relaxation of the uterus immediately after delivery, and the ease with which inversion can be accomplished. Atony of the uterus is the first cause of inversion; and when we consider how min-

[1] After writing this article the writer found in the essay of Dr. Harris on the Porro operation in continental Europe, published in the American Journal of the Medical Sciences, in 1880, the following sentences:

"Several other plans [of treating the cervix] have been proposed. * * * (2) to invert the uterus after its evacuation and constrict and remove it by the vagina. This plan tends to complicate the case and increase its dangers, etc."

Had the writer been aware that the suggestion which forms the basis of the foregoing paper had been previously published he would not have prepared it. Inasmuch, however, as the merits of the method proposed are in no wise affected by its having been previously suggested, he has decided not to withhold the article from publication.

[2] Diseases of Women, p 240.

[3] American Journal of Obstetrics, Aug., 1868.

[4] Emmet: Principles and Practice of Gynecology, 1884, p. 436.

[5] Pathologie und Therapie der Frauenkrankhe ten, 1885, p. 144.

ute is the percentage of inversions in the vast number of labors, we can fairly assume that relaxation immediately after delivery seldom occurs. If this be so, inversion, even with the *vis a tergo*, would be extremely difficult. Again atony of the uterus is the cause of the most dangerous symptom or complication of inversion, namely hæmorrhage; therefore the cases most favorable for the operation of Dr. Bartlett would be the last ones in which so doubtful an experiment would be tried. The Doctor has made a valuable suggestion. Any method that successfully removes the uterine stump from the abdominal cavity, without attaching it to the abdominal incision, advances the operation of hysterectomy. In the ablation of the non-pregnant uterus, I think Dr. Bartlett's method finds its best opportunity.

Dr. James H. Etheridge asked if the performance of inversion by forcible traction involved the full dilatation of the neck of the uterus. How does Dr. Bartlett propose to accomplish this, does he dilate it forcibly? With the uterus well up beyond the umbilicus, how do the broad ligaments come out of the pelvis, and with the uterus forced clear down out of the vulva, how much traction is there going to be on these broad ligaments? Is there room enough to permit the uterus to be drawn down?

Why, under the circumstances, could not forceps be immediately applied to the edge of the cut uterus, and arrest the hæmorrhage, and the work be then proceeded with at pleasure? I speak of hæmostatic forceps.

Dr. E. W. Sawyer said: It seems a little presumptuous for one who has never had experience in this department to attempt to enlighten the Society. One of the most interesting questions to be decided is which operation to perform. I confess if I were confronted to-night with one of these cases I would be wholly incompetent to decide between Cæsarean operation and the operation of Porro. It may be interesting to read the words of Lawson Tait upon this very point, showing his preference for the new operation, so-called. In the fifth number of the *British Gynæcological Journal*, he says: "The whole of my experience in meddling with the pregnant uterus by abdominal section, consists of five cases, three of the ordinary Cæsarean section and the two I am about to describe in detail. Of the Cæsarean sections one was performed for malignant disease of the vagina about fourteen years ago, the other two for deformed pelvis respectively seven and five years ago and the mothers died, and only one of the children is now living. The results indeed are such as to determine me never to repeat this procedure, having before me the arguments of Dr. Godson and the fact that both my amputation cases have recovered." At the same meeting Dr. Routh said: "That he was much interested and instructed by Dr. Lawson Tait's paper. At the same time he could not help making some criticisms upon it. First, he believed that Mr. Tait had exaggerated the mortality of the Cæsarean section. It was not anything like 99.971 per cent. Churchill stated that out of eighty cases twenty-three mothers were saved, or 28.7 per cent., forty-four children being saved. Dr. Radford out of seventy-six cases he collected, found 14.28 were saved, and forty-six children were also saved. Dr. West, out of 409 cases states the recoveries as 38.4 per cent. 237 children being saved. Now he (Dr. Routh) could not help feeling that if in these days of improved antiseptic abdominal surgery, the same skill and care were taken in cases of Cæsarean section, the safety of the mother would be much more common." It is interesting to see how gentlemen will differ in their opinions upon such an important thing as the selection of an operation in an emergency case. So I am still in doubt whether to adopt the modern method of Porro or to depend upon the Cæsarean section, which the remarks of Dr. Routh would indicate is quite as favorable.

At the request of Dr. Etheridge, Dr. Sawyer narrated the following case, showing the shock and hæmorrhage of acute inversion: I will state very briefly an experience which, no matter how long I may live, seems as if it would never become dim. I have never had any doubt that the determining cause of the acute inversion in this case was the enormous distension of the uterus due to the large quantity of *liquor amnii*. Before the woman was delivered, I was impressed with the fact that she probably had twins, but this was not the case. When the woman was delivered the bed was flooded, the *liquor amnii* flooding the room even. I put my hand upon the woman's belly, as is my custom, and at the first indication of contraction of the uterus, I substituted the husband's hand for mine that I might pay attention to the child. I am confident that the husband's fingers dimpled that uterus. I had no sooner detached the child than I gave the usual teaspoonful of ergot; I was in a hurry on account of the flabby condition of the uterus, and for fifteen minutes my time was occupied in paying attention to the child, getting it to breathe. The woman, who had recovered from a small quantity of ether which I gave her, threw up her hands and I saw she was pale. I put my hand under her husband's and felt the edge of the uterus like the edge of a saucer, I could define the margin of the crater, my finger in the vagina met the globe inverted and the truth flashed across me that I had an inverted uterus. Now fifteen minutes had not elapsed before that uterus was so firmly ergotized that it was impossible to replace it. I immediately resumed ether and the woman began to snore, but that made no difference, the womb was ergotized and the woman died from shock and hæmorrhage with the uterus unreduced.

Dr. Jaggard has called attention to the enormous hæmorrhage and this reminds me of a case in which I removed a fœtus from the abdomen of a woman, in the little town of Boulder. The fœtus had been in the uterus for three and a half years. It was an adventitious uterus the exact structure of which could not be ascertained, but the hæmorrhage from the false uterus was enormous and I think destroyed the woman. If the false uterus and adventitious sac could bleed to that degree and so early in pregnancy, the dangers of hæmorrhage must surely be greater in the uterus at term containing a living fœtus and an active placenta.

This operation was done in 1874. The hæmorrhage was cavernous. We arrested the hæmorrhage by seizing the edges and puckering them up and tying an enormous ligature around the stump; for a moment that arrested it, but the woman subsequently died.

DR. H. T. BYFORD said: Like any other operation this one, supposing it to be an operation that has been performed, has its limitations. I think Dr. Jaggard's suggestion that a greatly contracted pelvis might afford sufficient difficulty to make the operation impracticable, is a good one, although I think that the uterus might be inverted through a pelvis too small or too much distorted for a safe craniotomy. Another limitation would be an undilated condition of the cervix. The irritation produced by rapid dilatation would certainly render the cervix unfit to be left as a stump, and make the Cæsarean or Porro operation preferable. If the os is already dilated, then Thomas' revised laparo-elytrorrhaphy must be given precedence, provided there be no counter-indications. The difficulty of inverting the uterus is not an imaginary one, and it seems to me that the best way to overcome it would be to invert the uterus, placenta and all, before the placenta is separated, and between pains. This would tend to still further limit the operation to cases without extreme contraction and would bring it into rivalry with craniotomy. Its chief advantage over the Porro operation lies in not fixing the cervix several inches beyond its normal position; and here lies the germ which the author seems to be trying to develop. Should there be a condition of the uterus which would not favor the Cæsarean operation as performed by Sänger and Leopold, should the size of the cervix or vagina render fixation of the stump in the abdominal too difficult, were the uterine walls not sufficiently relaxed to he inverted, or the pelvis not roomy enough to allow inversion with the placenta attached, should the condition of the tissues about the vagina and bladder contra-indicate laparo-elytrorrhaphy, and should the os dilate naturally and easily, then this operation would find its rare opportunity. The process of coning out, or rather slicing around the cervix, and inverting the cervix, is easier to talk of than to perform. Any one who has seen the uterus amputated, even in cases of fibroid tumors, will agree that the loss of blood, including that taken off with the amputated pregnant uterus, and the vascularity of the stump would make the process of inverting the sliced cervix very hazardous. The stump, thus turned down, would undoubtedly shrink rapidly, and become a hard one to manage. As to opening the uterus with the cautery, I think this would not possess much advantage unless complete constriction of the uterus and broad ligaments could be made, so that bleeding would not interfere with the complete searing of the parts.

DR. BARTLETT in closing said: Some of the fellows taking part in the discussion, as they have stated, have not had an opportunity of hearing more of the paper than the bare proposition; not needlessly to occupy time, I shall pass over such objections (all of which I recognize as forcible), as have been fully considered in the paper now printed.

Dr. Jaggard refers to the authorities quoted by me as "questionable;" so far as my knowledge extends, not a case cited rests upon other than unquestionable authority. The Doctor thinks the actual cautery would prove useless as a means of arresting hæmorrhage from the uterine incision. Prior to the time of Ambrose Paré, the cautery was relied upon "to arrest all forms of hæmorrhage."

Dr. H. T. Byford has dwelt upon the difficulty of dilating the *os uteri* by artificial means, and in my opinion he has not exaggerated the difficulties often encountered in practice, where the parts are not prepared for dilation.

In regard to the embarrassment felt by the Secretary as to which operation to prefer, whether the old or the Porro method, I might say, that, in face of the several substitutes and modifications, he would be amply justified in preferring the old Cæsarean section.

DOMESTIC CORRESPONDENCE

BLACK CERUMEN.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—Some time ago a lady told me that her little girl, about four years old, had, since birth, discharged black wax from her ears. Never having met with such an instance, except where inspissated, although I do a considerable ear practice, and not recollecting ever to have read of anything of the kind, I concluded it was either a mistake or an anomaly, and so asked an immediate examination to determine the facts.

The mother and child being at my house, I proceeded at once with the investigation. I found both external auditory canals bathed with soft, fresh looking cerumen, more abundant than usual, of about the consistency of thick treacle or thin tar, in fact, looked much like tar, being intensely black and so tenacious as to bear drawing out in long threads. Under the microscope it presented identical appearances with freshly secreted healthy cerumen. No vegetable cells, spores or filaments were found, as I had anticipated, nor were there any pigment granules. The coloring matter seemed to be of a soluble nature, and was thoroughly incorporated with the wax, giving it an amber tint under the cover glass where thickest.

The child's hearing is, and has always been, perfect; nor has she ever had any disease of her ears. She has auburn hair, a beautiful fair and clear skin, and dark brown eyes. All the other secretions and excretions of skin and other organs are normal. Her mother assures me that the wax from her ears has been black from her birth, and always unusually copious.

If any of the readers of THE JOURNAL can cite a similar case, or offer any scientific solution of this, I shall feel under many obligations.

Very truly,

T. E. MURRELL, M.D.

Little Rock, Ark.

POTASSIUM CHLORIDE.

To the Editor of the Journal:

Dear Sir:—As regards the use of the chloride of potassium, as recommended by Dr. A. F. Pattee, of Boston, Mass., and published in your journal, I desire to say that I have used it in several cases of *anæmia*, and also in myalgia, and found it highly satisfactory. I can only wonder that its use in cases of this nature has never been recognized before. I have also found it a most excellent mouth wash.

Yours very sincerely,

H. C. Fielding, M.D.

Toledo, Ohio, Sept. 24, 1886.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, Richard J. Dunglison, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

Association of the Surgeons of the Pennsylvania Company.—The eighth semi-annual meeting of this Association will be held at the Seventh Avenue Hotel, Pittsburgh, Pa., Tuesday, October 19, 1886, commencing at 9 A.M., Eastern time. A number of papers on appropriate subjects are promised.

Fite–Stevenson.—Married, at Calvary church, Memphis, by the Rev. Father Klein, Sept. 18, 1886, at 9 A.M., Dr. C. C. Fite, recently of Nashville, now of the East Tennessee Hospital for the Insane, near Knoxville, and Miss Bessie M. Stevenson, of Dallas, Texas. No cards.

Long life and abundant happiness for both is the wish of the Editor.

Irregular Medical Schools.—The Iowa State Board of Health will not recognize diplomas from the following colleges: American Eclectic College, Cincinnati; American Health College, Cincinnati; American University of Pennsylvania (Buchanan), Philadelphia; Beach Medical Institute, Indianapolis; Bellevue Medical College of Massachusetts; College of Physicians and Surgeons, Buffalo, N. Y.; College of Physicians and Surgeons, Milwaukee; Eclectic Medical College of Philadelphia; Edinburgh University, Chicago and St. Louis; Excelsior Medical College, Boston; Hygeo-Therapeutic College, Bergen Heights, N. J.; Hygeo-Therapeutic College, New York City; Joplin Medical College, Joplin, Missouri; Livingston University, Haddonfield, N. J.; Medical Department of the American University of Boston, Boston; New England University of Arts and Sciences, Boston; New England University of Arts and Sciences, Manchester, N. H.; Penn Medical University, Philadelphia; Philadelphia University of Medicine and Surgery, Philadelphia; Physio-Eclectic Medical College and Physio-Medical College, Cincinnati; St. Louis Eclectic Medical College, St. Louis; St. Louis Homœopathic Medical College, St. Louis; Curtis Physio-Medical Institute, Marion, Indiana; American Anthropological University of St. Louis; Medical Department of Drake University, Des Moines, Iowa; and King Eclectic Medical College, Des Moines, Iowa.

Scientific Experts as Witnesses.—*The Chemical News* says: Let us look at this question as it presents itself to men of science, alike to the chemist, the physicist, mechanician, the geologist, the physician, and the microscopist, though certainly not to the astronomer, who is in no danger of being called, as such, to give his testimony. The expert occupies a totally anomalous position in court. Technically he is a mere witness; practically he is something between a witness and an advocate, sharing the responsibilities of both, but without the privileges of the latter. He has to instruct counsel before the trial and to prompt him during its course. But in cross-examination he is the more open to insult because the court does not see clearly how he arrives at his conclusions, and suspects whatever it does not understand. The late Dr. R. Angus Smith complained of being "contemptuously compelled to herd with thieves and scoundrels in a witness-box." He adds: "I have seen barristers speaking to a scientific witness in such a way as to show that to them a witness was always an inferior person." Surely, every person who has been present at a technical trial, or has had to appear as an expert in a poisoning, a patent, or an adulteration case, will be able to confirm this from his own observation and experience.

Now it may, perhaps, be cynically hinted that men of science should be willing to bear all this annoyance for the public good. But is it for the public good? In the first place, not a few of the most eminent men in every department of science distinctly and peremptorily refuse to be mixed up in any affair which may expose them to cross-examination. "I will investigate the matter, if you wish it, and will give you a report for your guidance, but only on the distinct understanding that I am not to enter the witness-box." Such in substance is the decision of not a few men of the highest reputation and the most sterling integrity. Certainly it is not for the interests of justice to render it impossible for such men to give the court the benefit of their knowledge.

Further, the spectacle of two men standing contradicting or seeming to contradict each other in the interest of their respective clients is a grave scandal. Men of the world are tempted to say that "science

can lay but little claim to certainty, and is rather a mass of doubtful speculations than a body of demonstrable truth." To us, at least, there is nothing more saddening than to read the trial of a notorious poisoner, or the report of a great patent case, especially if taken along with the comments of the press and of society on these occasions.

Here, then, we see that our present mode of dealing with scientific evidence is found on all hands unsatisfactory. The outside public is scandalized; experts are indignant; the bench and the bar share this feeling, but unfortunately are disposed to blame the individual rather than condemn the system.

But we fear that this unanimity of dissatisfaction will vanish as soon as a remedy is seriously proposed. To that, however, we must come, unless we are willing to dispense with scientific evidence altogether.

As it seems to us, the expert should be the adviser of the court, no longer acting in the interest of either party. Above all things, he must be exempt from cross-examination. His evidence, or rather his conclusions, should be given in writing, and accepted just as are the decisions of the bench on points of law.

THE BACILLUS OF MALARIA.—In 1879 Professor Tommasi-Crudeli published in the *Atti della Reale Accademia dei Lincei* at Rome, a memoir on the distribution of the subsoil water of the Roman Campagna, and on its influence in the production of malaria. In this research, which proved the starting-point of new studies on the etiology of malaria, the author traced the natural history of this morbigenous ferment, discarding many errors and prejudices of old medicine, and maintaining that the causal agent of the disease could only be a living organism. Towards the close of the same year Tommasi-Crudeli and Klebs published in the same *Atti* a memoir embodying the results of inquiries on malaric airs and soils, and of experiments on rabbits, proving that the living organism is a schizomycete, named by them "bacillus malariæ." As the result of researches on the individual affected with malaria, Marchiafava and Celli announced that within the red-blood globules are constantly found plasmatic bodies (*corpi plasmatici*) endowed with lively amœboid movements, in which the hæmoglobine is transformed into melanine (melanæmia); and in a further memoir which they have published this year, they suggest as a more probable hypothesis the opinion that those plasmatic bodies are the living organisms which produce malaria. Thus Marchiafava and Celli confirm in substance Tommasi-Crudeli's opinion, that a living organism is the cause of malaria, but they regard its form as differing from a schizomycete. These observations are embodied in a note with which Todaro prefaces a communication by Tommasi-Crudeli in the April number of the *Lincei*, on "a bacillus found in the malaric atmosphere around Pola (Istria)." This bacillus resembles the most typical forms of the bacillus malariæ which Tommasi-Crudeli and Klebs found in the air and subsoil of the Roman Campagna, which is *par excellence* the home of malaria. Since identity of form does not necessarily imply equality in infective power, Tommasi-Crudeli reserves his definite opinion on the bacilli discovered in the air of Pola, until they shall have been submitted to experimental research, a plan of which he has sketched.—*Lancet*, August 21, 1886.

AMERICAN RHINOLOGICAL ASSOCIATION.—This Association will hold its fourth annual meeting at St. Louis, Mo., October 5, 6 and 7.

NEW YORK STATE MEDICAL ASSOCIATION.—*Fifth District Branch.*—The second annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, Oct. 12, 1886. There will be a morning and afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes or communications, or by exhibiting specimens. The Secretary desires to be notified of the title of any paper to be offered. E. H. SQUIBB, M.D., *Sec'y.*
P. O. Box 94, Brooklyn.

PROF. LUDWIG BANDL, of Vienna, has been appointed to Prof. Breisky's Chair in Prague. Breisky goes to Vienna.

THE AMERICAN ACADEMY OF MEDICINE will meet in Pittsburgh on October 12th and 13th.

SMALLPOX AND VACCINATION IN NEW YORK.—We take the following from the "Fifth Annual Report of the State Board of Health of New York:" "The objections and occasional resistance to vaccination which are met with among immigrant passengers, indicate a considerable scepticism in European communities, more particularly among the English people, as to the protection afforded by it, or else a fear that constitutional disease will be introduced by that means. The groundless character of the fear that disease will be communicated by vaccination, when proper care is used in the selection of the vaccine virus, has been too often demonstrated to require any argument in this place. The result of the teachings and influence of the anti-vaccinationists is well illustrated by the fact, that in the hospitals of the city of New York not a single case of smallpox exists at this time, while in the city of London the reports have shown for months past an average of upwards of eleven hundred cases in hospital. In New York City, where a 'from house-to-house' inspection and search among the tenement population for the unvaccinated is practiced every year, smallpox is not met with, except as it was imported and developed by persons from other localities; in London, the weekly average of new cases, as indicated by bills of health and the number in hospital, has been from four to five hundred. The number of cases of smallpox on vessels that entered that port in 1883 and 1884, was twenty-five."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 18, 1886, TO SEPTEMBER 24, 1886.

First Lt. W. W. R. Fisher, Asst. Surg., granted leave of absence for one month, to take effect Sept. 10, with permission to apply for one month's extension. (F. O. 88, Dept. Arizona, Sept. 1, 1886.)

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, OCTOBER 9, 1886. No. 15.

MEDICAL DEPARTMENT. ARMY

ORIGINAL ARTICLES.

SURGICAL RELATIONS OF THE ILEO-CÆCAL REGION.[1]

BY J. McF. GASTON, M.D.,
OF ATLANTA, GEORGIA.

In considering the functions of the different portions of the alimentary tube, and their liability to derangements, none seems of more importance than the ileo-cæcal division of the small and the large intestines. Apart from the intimate connections of the duodenum with neighboring organs, there is no part of this highly vitalized conduit, from the stomach to the rectum, whose physiological operation is so essential to health and whose pathological conditions are so hurtful, as this valvular mechanism. A complete separation of the nutritious and excrementitious processes is effected by this somewhat complicated apparatus; and an entire transformation in the contents of the alimentary canal ensues after passing through this peculiar connection of the small and large intestines.

A brief outline of the relations of these organs, given by Weisse and by Ziegler, may prove satisfactory for a proper comprehension of the various affections, involving the ileo-cæcal connections, which require surgical treatment. The cæcum, lodged in the superior part of the right iliac fossa, and completely invested by peritoneum, is inferior to the ileo-colic opening—the latter at the junction of the cæcum and colon. From the cæcum is appended a blind tube, the appendix vermiformis, which curls inferiorly and is suspended by a special meso. The ascending colon for its first half is fixed to the interior of the right posterior wall of the flank by the ascending meso-colon (Weisse's Anatomy, p. 61). Upon the surface of the cæcum, its longitudinal muscular fibres are so collected as to form three bands, one anterior, one postero-external, and one postero-internal; it is these bands that determine its sacculated character. These longitudinal bands are presented in the course of the lower portion of the colon fron the bundling of the longitudinal muscular fibres, with the peculiar sacculæ of this gut interposed; having the appendices epiploicæ at the clefts between them. The inner mucous membrane is raised into transverse prominences between the three longitudinal furrows.

The superior branch of the ileo-colic artery distributes to the commencement of the ascending colon, the inferior distributes to the cæcum, and the terminal portion of the ileum and anastomoses with the trunk of the superior mesenteric artery. The inferior portion of the ileum is covered by peritoneum, and at the line where the two layers meet upon its circumference its arteries and nerves enter and its veins and lymphatics leave it. The valvulæ conniventes furrowed by the reduplication of the mucous membrane in the other parts of the small intestine, are absent in that portion of the ileum adjoining the valvular connection with the large intestine. The ileo-colic valve is formed by two reduplications of the mucous membrane of the colon, which effects a button-hole slit of communication, that only admits of the passage of solids or fluids from the small into the large intestines. This may be demonstrated by filling the ileum with water, and allowing it to pass through the valve into the colon, when reversing the current it will be arrested effectually by the valvular folds. The canal of the vermiform appendix opens into the cæcum, passing through its wall obliquely, thereby forming a valvular opening. Its mucous lining membrane differs from that of the cæcum (Weisse's Anatomy).

Colitis is sometimes caused by the arrest of fæcal matter in the ascending colon and the formation of hard masses; it is also due at times to septic infection, and again to a specific poison, as in dysentery. We learn from Ziegler's "Pathological Anatomy," that catarrh ending in atrophy is commonest in the large intestine, and especially in the cæcum. Nothnagel found that in 80 per cent. of the adults he examined there were traces of atrophy in the large intestine, at times confined entirely to the cæcum. The ascending colon came next as regards frequency, and then in diminishing order, the upper part of the ileum and the jejunum. The muscular coat is usually unaffected, but here and there it may be atrophied. It is not very liable to degeneration, but sometimes, as in phthisis, it is found to be fatty. Lastly, there is a congenital form of atrophy, a hyperplasia of the muscularis, which is not made up in after life. In chronic catarrh atrophy is occasionally associated with the development of hyperplastic growths. They take the form of hyperplastic indurations of the submucosa or polypous excrescences arising from the mucosa. When fully developed these last consist of fibrous tissue enclosing a few remains of glandular structures, which here and there are degenerated into closed cysts.[1]

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association,

[1] Ziegler, Text-book of Pathological Anatomy, p. 281.

Inflammation of the ileum is often marked by the swelling and prominence of the solitary and agminated follicles. The former appear as reddish or grayish protuberant nodules; the agminated follicles as flat elevations, grayish, red or pink in color, and pitted with numerous little depressions. When these follicles break down they leave behind them follicular ulcers.[2]

The vermiform appendage is peculiarly adapted to catch and retain substances passing shrough the cæcum. Matters which have been swallowed—such as grape-seeds, apple-pips, cherry-stones, and the like—and fæces, may accumulate in the appendage and set up inflammation. Sometimes these become encrusted with phosphates and carbonates, and so form fæcal concretions or calculi. The inflammation thus set up may extend to all the coats of the appendages and then attack the contiguous structures; and in this way necrosis and gangrene, with perforation, may be caused. The issue differs in different cases. It is comparatively favorable if the inflammation continues to be circumscribed, while the exudation is moderate in amount; protective adhesions and false membranes may thus be formed about the affected spot. It is very unfavorable when perforation takes place before adequate adhesions are formed; fatal peritonitis is nearly always induced. When perforation takes place into a part of the peritoneum shut off by adhesions a burrowing fæcal abscess is produced, which may burst internally or externally. Sometimes the appendage is entirely obliterated by adhesive inflammation; but if the inner or intestinal end becomes closed while the remainder continues to be patent, the natural mucous secretion may collect into the latter and distend it into a cyst.

Typhlitis and perityphlitis are sometimes due to the extension by continuity of inflammation already existing in more distant parts of the cæcum or colon. Tuberculous and typhoid ulceration localized in the vermiform appendages may give rise to dangerous lesions.[3]

As autopsic observations afford us an insight to the pathology of cases otherwise obscure, it may prove satisfactory to present an abstract of two cases from the report of Dr. W. T. Bull, in the *New York Medical Record*, touching suppurative peritonitis: A laborer, aged 25, with pulse 120, respiration 30, temperature 103°, with considerable general tympanitis and great pains, referred particularly to the right side and iliac fossa and radiating down the side, had a chill, followed by high fever and vomiting. He was constipated, but the bowels had moved once after an enema. The needle detected pus only in the lumbar region, where there was no tenderness. An incision was made down to the very wall of the colon, and but a drachm of offensive pus was found behind the colon. The symptoms of general peritonitis persisted, and he died in two days. The autopsy disclosed a general suppurative peritonitis, perforation of the appendix in two places near the cæcum, and fæces in the connective tissue of the iliac fossa, which was softened and necrotic as far up as the liver, but not yet broken down so as to form much pus, and *nowhere communicating with the peritoneal cavity*. In a like case of Dr. R. Wiener there was found general peritonitis and an abscess behind the cæcum and ascending colon, which contained a pint or two of fluid fæcal matter

A peculiarly instructive case of traumatic origin is reported in the *Medical Press*, of London, for March 31st, 1886, by Mr. W. A. Meredith, of a feeble woman aged 58 years, who was operated on at the Samaritan Free Hospital in April, 1885, for double ovarian cystoma, complicated by very extensive adhesions. At the end of a week, the bowels having acted and the pulse being normal, the stitches were removed and the abdominal incision was found well united. On the evening of the same day the patient suddenly complained of nausea and soon after vomited a quantity of dark-green fluid. The examination revealed some dulness over the region of the cæcum and the condition was diagnosticated as commencing intestinal obstruction. On the following morning an operation was undertaken, and on opening the abdomen the peritoneum was found intensely red and conjested, evidently in an early stage of acute inflammation. Attention was attracted to a coil of greatly distended small intestine, which was badly kinked and obstructed in consequence of the traction exerted upon it by a portion of the ligated omentum, which was closely adherent to its surface. This having been released with some difficulty, owing to the inflamed and softened state of the bowel, another distended coil, similarly obstructed by a separate omental band, was also set free. No further obstruction being discoverable, the abdomen was then closed. The acute symptoms were at once relieved by the operation, and the temperature fell to normal again on the third day, but convalescence was tedious. The bowels were evacuated for the first time on the twenty-third day by enema, and thenceforth they acted daily. The patient left the hospital on May 16th, exactly six weeks from the date of her first operation, and when last heard from in the end of October she had quite recovered her health.

The favorable issue of this operation on the eighth day after a previous laparotomy, from which inflammation had ensued, presents a crucial test of the efficacy of operative interference in abdominal troubles complicated with peritonitis; and is corroborated by other successful laparotomies after inflammatory development. This confirms my remark[4] when treating of Duodeno-cholecystostomy, as follows: It is an interesting fact that in some conditions of traumatic origin secondary operations are attended with less risk to life than those undertaken soon after the receipt of injury; and we are led to infer that the reaction or tolerance of the organization in its abnormal state may be favorable to the result of surgical procedures in the human system after the disorders connected with biliary obstruction have diminished the tendency to active or acute inflammation in the organism. A problem of serious import for the sur-

[2] Ibid., p. 282.
[3] Ibid., p. 283.

[4] On page 240 of the "Reference Handbook of the Medical Sciences," Vol. ii.

geon is, however, sometimes presented as to the extent of impairment in the vital energies that is compatible with recovery from an operation; and we must not delay surgical relief until the capacities of the physical constitution are exhausted; yet, the tendency to destructive inflammation must be lessened by this adynamic element, so as to impart a tolerance of surgical interference.

A case reported by Dr. Charles A. Leale, in *Gaillard's Journal* for April, 1886, illustrates an interesting phase of injury to the intestines, from a gun-shot wound. In this instance at least two portions of the bowels were perforated, one below the cæcum, in the ascending colon, and the other in the small intestines, each of which subsequently was the seat of an artificial anus, through which all the discharges took place from March 25, 1865, the day the wound was received, until April 27, when, to relieve a desire to empty the rectum, an enema of soap and water was given *per anus* with the desired effect of reëstablishing the potency of the entire length of the intestinal canal. After using the opium and stimulant treatment for thirty-one days, several sloughs of tissue and omentum were removed. Diet of beef extract and light nutritious food brought about steady improvement, and the doses of opium were gradually diminished until the seventy-ninth day. At this time the openings were thoroughly irrigated with sol. sodæ chlor., dil., the surrounding tissue down to the intestinal canal was denuded so as to represent an incised circular wound; the walls were approximated and the parts were hermetically sealed externally. In ten days the dressings were removed, showing complete success in the closure of the anterior wound, but failure of the operation as to the posterior, from the presence of a cherry-seed in the aperture, which had been swallowed while eating the fruit surreptitiously. Two weeks subsequently another operation obliterated the posterior fæcal fistula, after which the fæcal matter passed alone by the anus.

On the 30th of July, 1885, over twenty years after operating in this case, a letter was received stating that the patient "enjoyed pretty good health," and it is inferred that it was a complete success.

The fact of passing over a month subsequent to the injury without a rectal evacuation, and having intestinal communication restored by such simple means, corroborates the evidence afforded by discharges from both apertures, that no arrest occurred at the intervening ileo-cæcal connections, and substantiates the recuperative powers of nature.

The ileo-cæcal connections become involved in disease of an acute or chronic form, and the pathological condition may be of a benign or malignant nature. That abnormal relation of the parts connected with invagination of the ileum, by its passage through the valvular opening into the cæcum or colon, is, at the outset, simply a mechanical displacement, but very soon induces modifications of the nerve elements and in the sanguineous circulation, accompanied by an inflammatory state of the tissues. There may exist a considerable constriction by spasm of the muscular components of the ileo-cæcal valve causing all the symptoms of obstruction, with the development of inflammation only as a secondary modification, and we are warranted by the speedy fatal termination of some cases, with indications of collapse, in attributing the result to an operation through the nervous system similating shock. I had an opportunity of making a post-mortem of a case which was diagnosticated as intussusception in my private infirmary during my residence in Brazil, that died on the third day; and there were really no indications of inflammation in the tissues. A very remarkable feature of this invagination of fourteen inches of the ileum within the colon was such a constriction remaining at the valve four hours after death, when the autopsy was made, that no traction short of a rupture of the gut was sufficient to withdraw it. But upon insinuating a probe-pointed bistoury and nicking the edge of the valvular fold, the bowel was readily drawn out, being in such a state of preservation that there could have been no liability to disorganization of its structure had laparotomy, with release of the constriction, been resorted to some hours before the collapse ensued. This case is unique in that a spasmodic constriction continued after death.

In another case of death on the third day, to which allusion is made in my article on "Obscure Impediments of the Intestinal Canal," in the December, 188?, number of *Gaillard's Journal*, all the symptoms warranted the diagnosis of intussusception, and yet under the influence of chloroform there was no tumor found, or other evidence of local inflammation in any part of the abdomen.

The case of invagination through the ileo-cæcal valve in which laparotomy was performed on the fourth day, by Dr. J. C. Irish, of Lowell, Mass., only exhibited some congestion of the ileum for a few inches above the obstruction, and the remainder of the intestinal canal was free from any inflammatory action.[5]

It is evident, therefore, that inflammation is not set up generally within the first twenty-four hours after the symptoms of invagination indicate the nature of the case, so that the course inculcated by Mr. Frederick Treves, in the *British Medical Journal*, of August 29, 1885, as to the performance of laparotomy within this period is based upon correct pathological principles.

The great surgical desideratum in regard to this class of cases is a proper basis for forming a correct diagnosis, and a question of paramount importance is the propriety of resorting to an exploratory incision for the purpose of verifying the presumptive evidence afforded by symptoms of invagination. Simple incision of the coats of the ileum near the valve on account of arrested biliary calculi, and of the walls of cæcum for fæcal concretions or other solid bodies lodged in this depository, are required at times, all of which necessitate the preliminary measures of laparotomy.

In cases of doubtful diagnosis, presenting reasonable grounds for the conviction that there exists a disorder calling for operative interference, exploratory laparotomy should be resorted to at an early stage after other modes of treatment have failed to

[5] Boston Medical and Surgical Journal, Sept. 3, 1885.

afford relief; and the consequences of thus opening the abdominal cavity where operations upon the contained organs are not undertaken, are not generally serious.

With a view to afford temporary relief for ileo-cæcal disorders, enterotomy is recognized as a legitimate recourse in surgery; and some eminent surgeons have even recommended this procedure for forming an artificial anus, where the nature of the trouble was not apparent after exploratory laparotomy, yet it should be avoided whenever other means of relief are available.

"Typhlitis, strictly speaking, is limited to affections of the cæcum and its appendix vermiformis; perityphlitis is mostly due to extension of the inflammation to their peritoneal envelope; while the term paratyphlitis," according to Whittaker, "signifies an involvement of the extra-peritoneal and post cæcal connective tissues," and may perhaps appropriately include all the inflammatory developments in the ileo-cæcal region. But the inquiry proposed extends to disorders of this division of the intestinal canal and its surroundings, which may occur without inflammatory action in the tissues, and hence not included in the above classification. I have therefore adopted the comprehensive phraseology which heads this paper, as a general expression, embodying the various derangements of the ileo-cæcal connections that call for surgical interference.

The modifications of structure from acute and chronic disease of an idiopathic nature, as well as those changes which are induced by obstructions of various kinds from within or without the intestinal canal, on either side of the valve of Bauhin, with the disturbance of function from volvulas and intussusception in this region, are the objects of our present investigation.

The degeneration of the normal constituents may result in fibrinous indurations or in malignant tumors, involving the walls of the cæcum and the vermiform appendix, as well as the adjacent structures, so as to interfere materially with their functions, and ultimately obliterate the lumen of the intestinal canal. On the other hand, suppurative action may ensue, burrowing in various directions, until a discharge takes place by ulcerations through the bladder, the colon, or into the peritoneal cavity, inducing peritonea, with all its grave consequences.

There are sometimes complications growing out of the implication of adjacent tissues which do not enter into the ileo-cæcal connections, from their temporary or partial engagement in the internal opening of the inguinal canal or in the aperture of the femoral tract. The strangulation, though relieved, may set up a train of disorders which extends itself to the neighboring organs by contact or by transmission of the inflammation through the common serous investment. Cellulitis may likewise ensue from septic influences, more especially in females, and involves the structures proper of the ileo-cæcal region. Thus it turns out that this special division of the intestinal canal is amenable to morbid impressions from various sources, independent o. the immediate origin of trouble in its own tissues.

A portion of the ileo-cæcal connections being covered by peritoneum, while another portion is attached by connective tissue to the wall in the lumbar region outside of the duplicature of this serous lining of the abdomen, the pathological conditions of the different segments are correspondingly modified by the inflammatory processes affecting the venous components of this complex organization. The mucous and serous membranes, the fibrinous and muscular elements, the cellular and connective tissues, show diverse effects. We learn from a concise paper of Mr. J. Bland Sutton, in the London *Lancet*, that inflammation is "*the method by which an organism attempts to render inert noxious elements introduced from without or arising within it;*" and that "the most important feature in the inflammatory process is the vascular disturbance."

The facts and observations adduced present the whole process of inflammation in an entirely new aspect, and instead of being a purely pathological process, it will rank as one of normal physiology, which when in excess comes within the domain of pathology.

Inflammation may be of two kinds, according to the nature of the irritant. It may be simple or specific. Simple inflammation is the reaction which follows mechanical, thermal or chemical stimuli or irritations. A specific inflammation is one which results from the introduction into the organism of a particular poison or irritant. The mode by which a piece of noxious tissue is encapsulated or cast out of the body illustrates the process by which bacteria, etc., are in some cases rendered inert by the activity of cells. If the invasion is large and the vitality of the organism enfeebled, the leucocytes are insufficient to cope with them, and disastrous effects follow.

It is not my purpose to treat of derangements in the pelvic viscera disconnected with ileo-cæcal affections, yet the consequences of inflammatory action extending to other parts, and the effects of perforation inducing peritonitis, with the suppuration involving adjacent tissues, owing to structural changes in this portion of the intestinal canal, belong to our inquiry. The results of operative proceedings in general peritonitis under the new regimé encourages a resort to laparotomy under circumstances which formerly would have been considered as contra-indicating such a measure of treatment, and this is the most striking outgrowth of antiseptic surgery which recent investigation has developed. That the very condition of the abdominal contents which previously proved a barrier to incising its walls, should now present a sufficient reason for laparotomy with a view to its proper treatment, is a grand revolution in abdominal surgery. Not only in peritonitis following perforation, but in that from general morbific impressions, laparotomy is warranted by the record of cases in which relief has been thus secured.

There are cases of recovery or death reported in which accurate diagnosis could not be made, and in which consequently no operation was undertaken or autopsy permitted. The statistics of obstruction being always doubtful without an exploratory incision, we cannot draw a satisfactory comparison between the supposed cases of invagination which are

relieved by general treatment and those which are verified by the performance of laparotomy. But the number of cases in which the diagnosis has been confirmed by a detachment of some portion of the alimentary canal and its presence in the evacuations, may be compared with those fatal results in which invagination is recognized by autopsies, and it is very desirable that we should have accurate statements of all such cases, for the purpose of forming a table representing the percentage of mortality without laparotomy. These two proceedings have their advocates in British surgery, under the leadership respectively of Mr. Jonathan Hutchinson and Mr. Frederick Treves, the former holding to the treatment without operative interference and the latter supporting early resort to laparotomy.

An elaborate report of Prof. Heinrich Braun, of Jena, upon the operative treatment of invagination, presented to the German Medical Congress, April 8, 1885, gives a table of cases with results as follows: Since 1870 out of sixty-one cases there have been fifty-one operations, eighteen of these cases having occurred in Germany and the remaining forty-three in other countries; of the whole, thirty have occurred in children and twenty-one in adults. In those operated upon eleven have been relieved while forty have terminated fatally. In twenty-seven of the cases disinvagination was effected and in twenty-four it was not; of the former eighteen were children and nine were adults. Four children survived while fourteen died. Seven adults lived while two succumbed.

Resection of the invaginated intestine was practiced in twelve cases, of which only one lived and the other eleven died, six being children and five adults. Enterotomy was performed in nine cases with death in all, there being three children and six adults. Enterotomy without disinvagination terminated fatally in ten cases, seven being adults and three children.

In eight of the sixty-one cases tumors existed and some of these were of a malignant nature. Of the cases in which the invaginated portion of the intestine was removed by resection, 42 per cent. died from peritonitis, perforation, or subsequent stenosis.

The inference drawn by Dr. Braun from the unfavorable results of those cases in which operative measures were delayed from a few to many days after the development of symptoms, is, that surgical operations should be resorted to promptly when the invagination is not relieved by simple measures. When the disinvagination is accomplished while the bowel maintains its vitality nothing further is indicated, but when gangrene has commenced, resection should be resorted to, provided the general strength of the patient favors it. But in cases of marked prostration, accompanied with meteorism, it is advisable to form an artificial anus, as the most speedy means of relief.

In the discussion upon Dr. Braun's paper, it appears that in German practice the early stage of all abdominal disorders is relegated to the physician's management, and it is only when operative interference is demanded that the patient comes under the surgeon's care, so that the case is usually of a grave order before surgical measures are adopted. Even washing out of the stomach and enemata of various components, with inversion of the body, massage, etc., and internal medication or subcutaneous injections, are resorted to by the physician sometimes for days in succession before turning over the patient to a surgeon. There is no greater mistake in regard to the province of surgery, than to consider this sphere of duty as limited to instrumental appliances, and it should be understood that the highest and noblest achievement of the surgeon is to cure when it may be practicable without the knife, or in cases requiring it, to prepare his patient properly for an operation. Thirty-two of the cases reported involved the ileo-cæcal connection, and of these only three survived, being less than 10 per cent. of cures by operative measures in this class of invaginations.

In a table of resections of the intestine for malignant growth, accompanying a paper of Dr. Robert F. Weiss, presented to the New York Surgical Society, January 26, 1886, seven out of the thirty-five cases given were located in the ileo-cæcal structures. Four of these cases survived the operation of resection, and in another the result is not stated, but probably recovered from the operation, thus affording $71\frac{3}{7}$ per cent. that escaped death from resection of the ileo-cæcal connections involved in malignant disease. The fact of recurrence in most of the cases at a longer or shorter interval does not materially affect the consideration of the propriety of such a measure; and yet there is an important lesson to be learned from the greater tolerance of the operative procedure in this chronic disorder of the tissues than in that acute inflammation connected with invagination.

A recognition of this pathological modification is essential for a proper comprehension of the surgical relations of the ileo-cæcal region and for a due appreciation of the different stages in the inflammatory processes affecting the various structures entering into this complex organism, at which separate steps may be taken for their relief. We have to encounter with surgical appliances the incipient hyperæmia or engorgement of tissues, the progressive changes of the inflammatory process, the suppurative degeneration and structural disintegration of acute developments; while on the other hand we must be prepared to combat the slower progress of fibrinous depositions, indurations, and accretions of material due to chronic disease, involving the elements which enter into the different tissues composing these organs. Again, the surgeon has to deal with those adventitious growths connected with malignant disease, which is very prone to manifest itself in the ileo-cæcal region; and each calls for a distinct mode of surgical treatment.

The operative procedures indicated by ileo-cæcal disorders are extra- or intra-peritoneal; the former consisting in exploratory punctures through the tissues in the inguinal or lumbar regions, and subsequent incisions to evacuate purulent collections; and the latter in laying open the abdominal wall for the purpose of correcting the abnormal relation of parts in the ileo-cæcal region. At the earliest period that pus may be detected in the iliac tumors deep inci-

sions have been attended with satisfactory results for the relief of fæcal abscesses. With the lights of experience as to the serious consequences of delay in obstruction of the intestinal canal from any cause on either side of the ileo-cæcal connection, it is warrantable to resort to laparotomy as soon as the symptoms indicate occlusion from other sources than fæcal impaction, without waiting to make a differential diagnosis, or delaying to test the effect of temporizing measures of treatment. The division of constricting bands, the unfolding of twists in the intestinal canal, the release of the invagination of one portion of the tube in another, the excision of gangrene or diseased segments and reunion by sutures, are demanded in various cases.

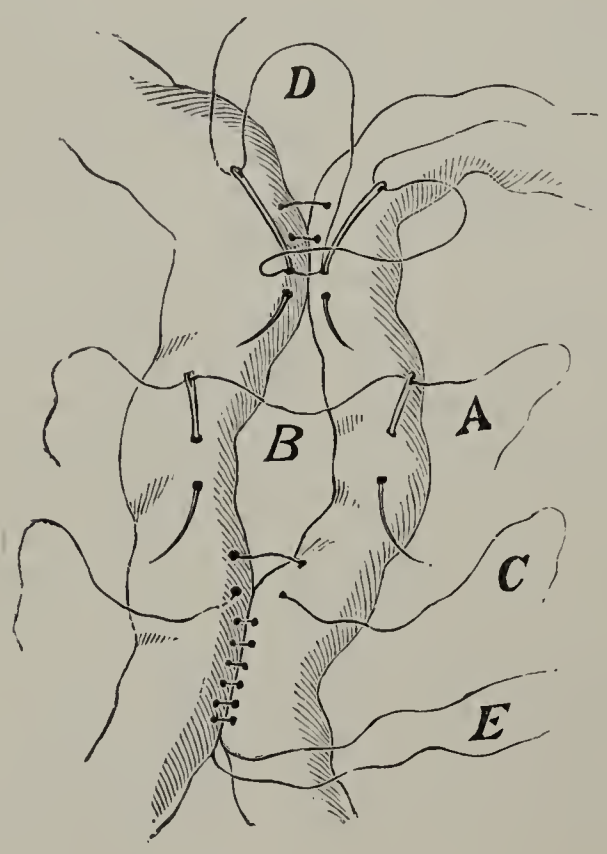


FIGURE 1.—A shows the insertion of needles for first stitch in intestinal walls. B represents the placing of initial loop. C displays the thread ready for closing. D gives the progressive stitching of walls in the opposite margins. E indicates the completion and knotting of threads.

Stenosis from fibrous depositions or malignant growths in the vicinity of the ileo-cæcal connection would seem to warrant the removal of the entire structure involved. But a grave question is presented as to the practicability of such a resection of this portion of the intestinal canal, and restoration of its tract, without a fatal result in acute cases. My experiments upon dogs by entire removal of the ileo-cæcal connection, and uniting the ileum with the colon, has caused death promptly in each case, apparently from the effects of shock, and it is doubtful whether favorable results can attend this operation on the human subject—the successful case of Czerny being incomplete resection, cannot be accepted as recommending excision in acute cases. The practicability of relief in this class of cases by effecting a direct communication between the ileum and colon, so as to cut off the passage through the ileo-cæcal valve, is worthy of consideration. This may be accomplished by uniting their walls with the Gely suture in an oval or circular form. so as to strangulate the enclosed segment, and thus cause an opening, while the outer surfaces become agglutinated, thus effecting union with immediate passage of the intestinal contents. The diseased structures become atrophied or may be excised subsequently. If it should be desirable to effect an immediate passage from the ileum into the colon, with a view to accomplish the resection of the diseased structures on the same occasion, there could be no difficulty in proceeding upon the same principle as indicated by my punch process for the communication of the gall-bladder and duodenum (in the article on "Duodeno-Cholecystostomy," which appeared recently in the second volume of the "Reference Handbook of the Medical Sciences").

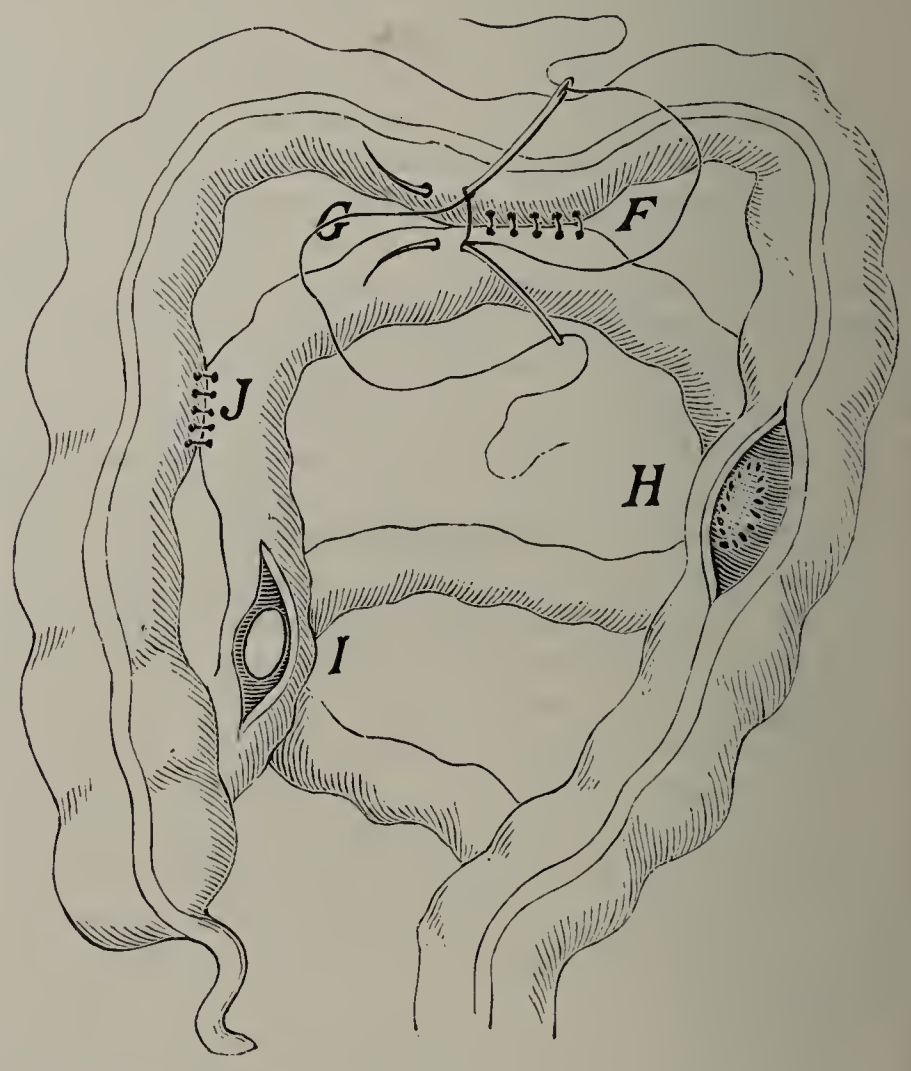


FIGURE 2.—F exhibits the attachment of the exterior surface of intestinal walls. G, needles entered for last stitch in the united coats of the large and small intestines. H is a view of the stitches in mucous membrane through the incision of colon. I is the opening seen by making an incision in the walls of the ileum after separation of segment of both coats. J represents the consolidation of exterior surfaces around the communication between the canals.

The application of this suture is made equally well in the continuity of the intestinal walls or after removal of a segment from each through a doubling of their coats, and effects from without the canal what is proposed by Bishop's suture from within. A single thread having a needle attached at each extremity is passed by the respective needles through the two several approximated walls of the large and small intestine, making a stitch of corresponding length through the whole of the tissues; and then by passing across so as to penetrate on opposite sides at the point of exit, other stitches are made, which draw the exterior serous coats in close apposition. Quite recently I have met with a strong confirmation of the indications for the process of mediate communication in the statement of Mr. T. B. Jessett, in his lectures at the Cancer Hospital in London, as follows: "When the obstruction is caused by the pro-

jection of a cancer into the gut the calibre of the tube may be restored by the breaking down and sloughing of the mass; or the disease extending, adhesive inflammation may take place between it and the adjacent portion of the intestine; ulceration taking place between the two portions, and an opening established, whereby the passage of fæces may occur from the portion of the intestine above the disease to another portion below it."

We may imitate nature in her effort to obviate the difficulty of constriction in the natural course of adhesions and a fistulous communication directly, by adopting the measure for uniting the coats of the intestinal canal above and below the point of stricture, and thus establishing a direct route for the passage of the contents of the alimentary canal by cutting off the obstructed coil of intestine.

The practicability of this procedure is shown in the operation of gastro-enterostomy, which consists in forming a fistulous opening between the stomach and jejunum, as originally suggested by Wölffler. It has been proposed by Billroth to remove the pylorus subsequently, and stitch up the cut ends, thus turning the food entirely through the artificial opening; and a similar operation of a secondary nature would be available for the removal of the ileo-cæcal connection involved in disease. So soon as the direct artificial communication between the ileum and colon is fully established through the opening made by separation of the tissues included in a circular or oval row of stitches, the cessation of the passage through the ileo-cæcal valve must lead to a gradual atrophy of the structures adjoining on either side, and in case of simple stenosis, obliteration of the canal will ensue, while if carcinoma exists, there will be such a diminution of vitality in the healthy attachments as to lessen materially their susceptibility to shock or inflammatory action, so as to admit of the requisite operation for removal of resection and suturing for closure of the divided ends.

A thorough investigation of the morbid conditions of the ileo-cæcal region leads to the following conclusions:

1. That certain modifications are corrected spontaneously, or by the process of resolution under treatment.

2. In the early stage of ileo-cæcal disorders, medicinal or mechanical measures are advantageous.

3. That extra-peritoneal punctures and incisions are beneficial in cæcal inflammation, with or without fæcal abscess.

4. Disorders involving the peritoneum, when not promptly relieved by general treatment, warrant exploratory opening of abdomen.

5. Impediments of the intestinal canal or morbid accumulations in the abdominal cavity, accompanied by meteorism, call for immediate surgical interference, with laparotomy.

6. In case of simple stenosis or malignant growths involving the ileo-cæcal connections, ileo-colostomy is indicated.

7. Gangrenous portions of the intestinal canal necessitate resection, and either direct restoration by suturing the ends or the formation temporarily of an artificial anus.

8. Operative measures in the ileo-cæcal derangements should not be delayed until the physical powers have become prostrated, but resorted to while there is capacity for reaction of the vital forces.

WHY DISEASES OF CHILDREN SHOULD BE MADE A SPECIAL STUDY.[1]

BY MARY HARRIS THOMPSON, M.D.,

OF CHICAGO.

The reasons why diseases of, or in children should be made a special study by the profession, are:

1. Because of the undeveloped and growing patient, which, though ill, must yet be nourished.

2. Because of the difficulty in diagnosticating those maladies, termed by Dr. Billings in his last report of vital statistics, as ill-defined forms of disease to which children under one year of age are subject.

3. Because, remedies considered essential to the relief of adults, are illy borne by the young child, and that those used must be considered in regard to the administration with the peculiar food of the child, the minute dose appropriate to the age, and the susceptibility of the nervous system in the infant to narcotics.

4. Because the special study will reflect itself upon the minds of the laity, impressing them with the importance of saving a child's life, and that, in so doing, a life in its entirety has been saved.

It is presupposed that, as we advance in civilization and enlightenment, health and enjoyment of living, if not wealth will result. Examination, however, proves that health is no more common among the people of to-day, than it was among the people of a hundred years ago. The very beginning of life is injured, first by vices of heredity, and second by the manner of parental living. The end of fœtal life is the beginning of a new one, beset with new dangers.

With the aid of the medical profession and its statistics, knowledge of the great mortality among children in the earlier months and years of life, is just dawning upon the minds of the laity. Although the subject is receiving some attention, there is no attempt to quarantine the vices of the nursery, the orphan asylum, the baby farms, much of the fashionable clothing of the children, the soothing syrups with their seductive amount of opium, and lastly, the the fifteen-year-old nurse-girl, with careless habits, mouldy nursing bottle, and as little practical knowledge of hygiene for the child as she has of navigation. With a cordon around these and the abolishment of the "quiet homes for women during confinement," the advertisements of which are allowed to fill the columns of the daily press; homes which prove too frequently so quiet for the child, for all time to come, we should have hope for a better and stronger race. Thus fortified, and with mothers willing to forego the pleasures of fashionable life and to devote themselves to infants of a healthy parentage, there will remain,

[1] Read in the Section on Diseases of Children, at the Thirty-Seventh Annual Meeting of the American Medical Association.

with the accidents incidental to child-life, enough for us to study.

Let us take a child at six months or six years of age and without syphilitic inheritance. If pulmonary, cardiac, or renal inflammation sets in, do we have the same symptoms by which to make a diagnosis as in adult life? Can we discern rheumatic inflammation for a certainty, in a child of either of these ages, before it has expressed itself in the swelling of some joint, or in the endocardium, and has made a lasting impression on the economy? The difficulties which present themselves in diagnosis are, that we have at six months a little individual susceptible of human disease, but with little more language than that of the lower animals; and with certain organs out of proportion to those of the adult.

At birth there is the large liver, which under the effect of the new physiological action of respiration by the lungs, so frequently produces infantile icterus. There is that condition of chest wall, air cell, and bronchia up to ten years of age which produces the "puerile respiration." Through the same period the bones are so cartilagious that though allowing much rough usage without resulting injury, the long bones frequently bend without any fracture, or partially break causing the "green stick" fracture, or break at the epiphyseal junction. In childhood there may occur injury to the skull which will result in epilepsy or mania in adult life. The simultaneous growth of the brain and nervous system with the other tissues is of such delicate balance and the nerves are so susceptible to the touch of disease in any organ that they may give a storm of action upon trivial causes, thereby, in the convulsions of this age, simulating most grave diseases and rendering a correct diagnosis difficult.

Though diseases *in*, or *of* children have not been a special study with me, a goodly number of the little ones have been placed under my care for treatment, and times have come when necessity has compelled me to pass from works on "theory and practice" to monographs on this particular subject. In consultation with wiser and more experienced physicians, in times of doubt in diagnosis, I have been deeply impressed with the general perplexity in determining which of the wheels in the miniature human mechanism before us, was out of order. In somewhat varied ways, we arrive at a correct diagnosis of the same disease in the different periods of life.

It is a gratification to have men of high culture and great experience, such as Eustace Smith, Goodhart, Barthez and Rilet, our own Smiths, and others, tell us of the difficulties of diagnosis in children. Eustace Smith says: That on account of the indefinite character of the symptoms, hæmorrhage into the brain or its meninges is very difficult to detect, and farther on that a diagnosis between hæmorrhage into the meninges or that into the substance of the brain is probably impossible.

Goodhart says that in pneumonia the sounds of consolidation are transmitted from side to side, particularly about the root with great readiness, and it is quite common in the auscultation of the lungs of children suffering from pneumonia to have evidences of consolidation at one visit which have gone at the next, or within a short time, and which must indicate a still more ready interchange of collapse and expansion than has probably hitherto been appreciated. In mentioning the difficulties of ascultation in children, he says that the ribs are soft and the muscles act more unevenly and the different parts of the thorax expand with comparative irregularity.

In the case of the child, the diagnosis having been made, the *treatment* must next be considered, and changed greatly from that of the adult: this, not only in the size of the dose, but in the manner of administration. The younger the child, the more rapid the effect of the disease. Let me introduce an illustrative case which will show how rapidly disease may appear, disappear, or come to a fatal issue in an infant: C. H. was born in the Chicago Hospital for Women and Children January 31st, 1886. He was a large, healthy, well-formed boy, and although bottle fed, was well until nine days of age. At that date, February 11th, thrush appeared in the mouth and pharynx and was accompanied by diarrhœa with very green, thin, watery stools. For the thrush, the mouth was cleansed immediately after each feeding, and washed with the following mixture:

℞ Sodæ bicarb..... ℥ss.
Acid carbol..... m iv.
Glycerine and aqua, aa ..... ℥ss.
M.

For the diarrhœa, the food was peptonized, and the hydrargyrum cum cretâ in one grain doses was given at intervals of three hours, and was followed at night with ol. ricini. in a m. x dose. On the succeeding morning the child seemed quite well. February 12th in the morning. the resident physician reported that one arm appeared paralyzed and hung motionless; the child had cried as if in pain and was sleepless. Examination revealed the head of the humerus, dislocated forward. The dislocation was easily reduced and bound in place, for we feared the child had had rough usage from the mother, as she had never welcomed it, but had always appeared impatient. None of the nurses knew how the accident had occurred. The child now ceased crying, and in the afternoon when the arm was unbound, used it as well as ever. On the morning of the 13th, it was reported to have begun a little moan the night before, and as having been restless all night, taking only short naps. We found it with slightly increased respiration, and a temperature of 101 3-5° F., which continued the same throughout the day. Percussion of the chest elicited nothing unnatural. Auscultation gave fine, dry, crepitant râles in the middle lobe of the right lung. There was some mucous râles in the upper lobe of the left lung. A warm bath containing bicarbonate of soda was ordered. The nurses through a misunderstanding added alcohol. This bath was given morning and night. Poultices were applied across the upper part of the chest, and under the right arm. They were renewed every second hour. They were ordered to be made as warm, not *hot*, as the child could bear. Having in view the desirability of giving the medicine in very small doses, in simple form, and with the food, the following was

given: Ammoniæ muriatis gr. x., was dissolved in aqua m. xv. S. One drop in milk every second hour, when not asleep.

On the morning of the 14th, the patient was about the same as the previous evening. The chest was not percussed or examined as the room was cool on account of an accident to the steam heating apparatus, and we feared the malady had been brought on by exposure by the mother, and possibly by us in reducing the dislocation. The child died at one thirty o'clock on the morning of the 15th, just a little more than forty-eight hours after the lung trouble had been recognized, and two hours after taking a usual quantity of food, with natural relish, and appearing more than ordinarily bright, and then sleeping as in health.

Examination of the chest and abdominal cavities was made nine hours after the demise. The digestive organs were healthy as were their contents. The right pleural cavity was so completely full of a reddish straw-colored serum, that it welled out upon the first break of the pleural sac when opening the chest at the highest point, and was estimated to be several ounces. The costal pleura was of a dark pink color; the pulmonary pleura was of a more opaque white and very slightly mottled, with large spots of a darker tint, but with a more transparent appearance of the membrane. Otherwise, the lung seemed normal with the exception of an apparent cyst, partially embedded in the parenchyma, and now about to burst the greatly attenuated pleura. When it was opened, about one drachm of perfectly transparent, thin mucus flowed from it. This cavity was formed by the rupture and coalescence of the air cells, leaving a direct communication from one of the larger bronchiæ to the pulmonary pleura. There was no congestion around this cavity; no staining as if small capillaries had been lacerated, no fringed appearance to the naked eye. There was no cyst wall, no thickening of bronchial tubes.

Had the child died immediately after the feeding, it would appear as if the quantity of food in the stomach, might have added *its* pressure to that of the already existing, and rapidly effused fluid in the chest, and so have been one factor in causing the death, but the stomach was nearly empty.

Queries: Had the pleurisy existed only forty-eight hours, and with this result? Was the pleurisy the result of the pneumonia or *vice versa?* Or did they begin simultaneously? The lung was not greatly compressed as in adults in even acute cases of pluerisy. Shall we ever so understand diseases of children, that upon approaching a very sick infant, we shall not feel as if we are approaching a mystery forbidden us to know?

In child life, there is one grave effect of some maladies, that is greatly to be dreaded. It is that of deformity. In many instances, it leaves the child as a care, or burden to the whole family. It is true, that it may be in some cases a pleasurable one, and in some, there may be a moral compensation for the misery entailed upon the sufferer and friends, but it too frequently warps the mental, as well as the physical powers.

Some years since, it became my duty to treat a young woman of sixteen summers, who was said to have had spotted fever at six years of age. The head was developed to the age of sixteen; the chest was but partially so. There was a twisted condition of the spine, from a lateral and posterior curvature caused by a *development* of portions of the muscles, and a *paralysis* of others. The lower portion of the body had grown but little since her illness in early childhood. She lay upon her wheel chair, or couch. A fortune had been spent on jackets and corsets for the curvature, and electrical treatment to develop *muscular* action. One sister had given nearly her entire time for the comfort of this child, during the period of ten years; and the family had cared for the two sisters. This young woman, while a beautiful character, never seemed to *live* in the full sense of the word. She could neither laugh nor cry in a natural manner. She was taken ill with inflammation of the larger bronchi. With a natural condition of the chest wall, there would have been no danger; but when bronchorrhœa set in, in the second stage, she was unable to make more than feeble attempts to cough, because of paralysis of the intercostal and other muscles, and almost immovable chest-wall; hence her sudden demise from asphyxia from occlusion of the bronchi.

The maladies of either adult or child life cannot well be considered with a view to successful treatment, without first studying their origin. By so doing, we learn in what way, the laws of hygiene have been violated, and approach the millenium in the practice of medicine. However, we are, as yet, far from the goal of complete success. Though Koch, with the bacilli of cholera, and Pasteur with those of hydrophobia have made great strides, yet cholera still makes its periodical visits, and inoculated patients still die of hydrophobia. It has not been altogether determined whether septicæmia is produced by bacteria or ptomaines, the latter supposed to be the result of the former. There seems to be some doubt even as to the real origin of typhoid fever. It is a question with me whether some minor affections such as anæmia, leucocythæmia, and leukæmia may not be the result of micro-organisms in the blood. Cases of these classes have come under my observation in such ways as to prompt me to learn if some special manner of living had induced them. In two recent cases it proved to be dark, damp rooms, in which the patients not only slept, but lived during the day. These recovered with the use of iron and constant sunlight.

A rather curious, but interesting case was that of a little girl four years of age. Her parents lived in a desirable residence region; but she slept in a room on a damp court. The face became pale, and there was a loss of appetite. She suddenly became lame, or, as she expressed it, her arm would hurt her. Upon examination, the arm or leg would be found swollen from a certain point downward. The greatest point of swelling would be marked by a large ecchymosis of a dark purple color, as if the result of a bruise. There was an elevation of the ecchymosed spot above the general surface, as if produced by a large flat clot

in the subcutaneous tissue. In the course of a week or ten days, the color would change to a greenish red, then to reddish yellow, then gradually fade to the natural color, the œdema disappearing with the change in color. The heart beats were weaker than natural, but slightly increased in frequency. Within two months, these spots appeared and disappeared several times upon both upper and lower extremities. Though taking iron and quinine in large doses, she did not wholly recover until she lived in sunny rooms and slept in those sunned by day. Her food had been good. Was this malady produced by micro-organisms, allied to the malarial plant and generated in the dark, damp court of a high building? Her sisters showed no symptoms of the same disease, yet lived as she did.

Let us ask for more knowledge in regard to the *hygienic* treatment of children, which, if systematically followed, would be a *great power* in our hands. Should there be baths, or no baths? If baths, what kind? Should there be exercise, or no exercise? What kind of food should be taken and how?

It is all important that the character of food be changed for certain wasting diseases, as, in this condition of *growth*, if the child be deprived of food, by a lack of it, or by a diseased condition of the digestive apparatus, the result to the child is as disastrous as that of hæmorrhage is to the adult. Many a child literally dies of starvation, when the cause of the death is said to be ileo-colitis, or gastritis, or perhaps some disease not touching the alimentary canal itself. Yet had the physician given special directions regarding the food, the child might have recovered. Probably all have had cases of pertussis where children would throw off the food with a violent fit of coughing, and fade and grow thin if the meals were not immediately repeated.

Paradoxical as it may sound, children are often starved by what is called "good living." A full diet is allowed at a time when it produces so much irritation, as to cause an extension of some existing inflammation, or start a new one. For instance, a child of three summers with severe dysentery, which had recurred just two weeks after a former attack, was allowed not only the full diet of vegetables, pastry and fruit of the parents, but also full goblets of ice water. It died on the fourth day.

Another child of five years, with acute gastritis, a parched tongue, great thirst, nausea and vomiting, had all food by mouth discontinued. Only a few drops of water, perhaps a fourth of a teaspoonful, were allowed every fifteen minutes, an amount which might be absorbed before it reached the stomach. Nutritious enemas were given during a whole week; the boy recovered. The eruptive fevers of childhood have not been referred to, as their effects are as deleterious in the adult as in the child, except if deformity occur in childhood it is to be the longer borne. In these cases, however, when the exanthemata appear in full blossom upon the mucous membrane of the alimentary canal the only direction in regard to feeding should be to give the food in liquid form.

I cannot drop the subject of diseases in children, without reference to two remedies which are probably as old, if not older than any others in the pharmacopœia. They are opium and alcohol in their great varieties of form. Reference to them is made in order to raise the question if they cannot in any way be replaced. Administered once or twice, or for several days, for the relief of pain, opium may be most acceptable; but it is too frequently given before pain, the kind monitor, has made us understand in *what* way the economy is suffering. Again, if we allow the pain to continue until its source is found, the cause may be removed without the deadening opiate. The opiate is given to *quiet*, the alcohol to *stimulate*. The opiate proves to be the stimulant to many constitutions unless given in dangerous doses. If it be necessary to give opium for *acute* pain, it is certainly necessary for that pain which exists a long time. Twenty years ago it was regarded as *the* remedy in puerperal diseases, especially septicæmia; but it seemed to me that many patients died of the remedy instead of the disease. To-day many children die of the remedy instead of disease. Others live to recuperate after a *long* time, from a shattered condition of the nervous system, and an unnatural condition of the circulation, both having been induced in a measure, by the opiate.

Alcohol first stimulates, then quiets, leaving the system under great depression, and with a desire for further stimulation. In time vitality is lost. I am hoping to find in the new remedies, something which will not lead the patient into a condition of servitude, as do opium, alcohol, cocaine and chloral. Heat, an old remedy, will in many instances take the place of opiates and alcoholic stimulants. When applied to a part it increases the circulation in the capillaries of that part. When first applied it relaxes the wall of the capillary, thereby increasing the size of its lumen, allowing the collecting blood cells to pass on, and so causing the pain to cease. Opium, taken into the stomach, "slows" the whole circulation. If to quiet a local pain, the whole circulation is decreased below the normal standard, the whole economy suffers therefrom. If the circulation is increased when stagnation is occurring and producing pain, the relief is secured in a more natural manner, the secretions are not checked, and the materies morbi pass out of the economy, doing but little harm. I have used heat, applied externally, for pain in the chest, abdomen and pelvis. Even in diphtheria, when the tissues around the neck were swollen to their utmost, heat has relieved the pain speedily.

If obliged to use alcohol, let us, in the treatment of children, intentionally make it unpleasant. But if we cast about, we can often find that which *will* take its place. Let us use ammonia, heat, or *any* remedy, that will not dwarf the growth, through the nervous system, as *opium* does; that does not form in the child an uncontrollable appetite as alcohol or opium does if continued for any length of time; an appetite which the full force of a *man* cannot break.

A NEW POISON CASE.

BY G. W. WEBSTER, M.D.,

OF CHICAGO.

Cases of poisoning, either accidental or otherwise, are, unfortunately, quite numerous and very many of them are fatal. The treatment, in order to be successful, must be precise, energetic and prompt. In many cases, especially in the country or small towns, it is often difficult and many times impossible to procure the proper antidotes or remedies in proper form for administration, or even to obtain them at all. Then, again, not every physician carries in his mind a precise knowledge of the symptoms of all or even the important poisons, together with the proper antidotes, remedies and treatments.

In order to overcome these difficulties at least in a measure, I have designed the following described case:

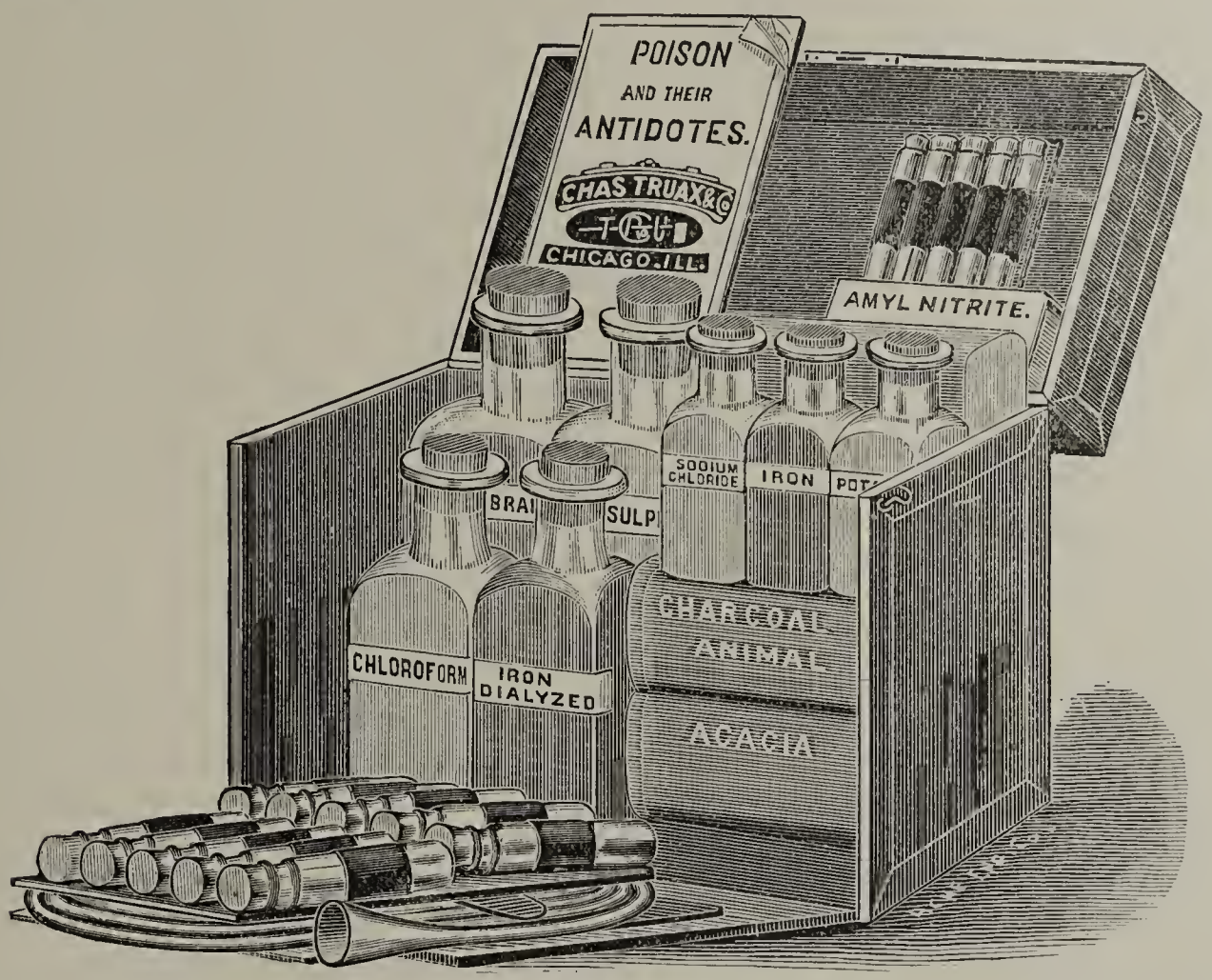
It contains a stomach tube, hypodermic syringe, and the following remedies and antidotes: Ether, ammonia carbonate, amyl nitrite, apomorphia, atropia sulphate, brandy, camphor, animal charcoal, chloral hydrate, chloroform, digitaline, iron sulphate, dialyzed iron, tr. of chloride iron, calcined magnesia, mucilage, morphia sulphate, potassium bromide, potassium iodide, liquor potassæ, strychnia acetate, sodium chloride, sulphuric acid, tannic acid, and zinc sulphate.

The case also has a small pamphlet, compiled by the author, which gives a summary of the general treatment of poisoning, together with a list of substances which are poisons, with the prominent symptoms and treatment of each.

Each bottle is labeled with the name of the drug, the dose, how administered, and in which cases it is most serviceable. I do not assume to offer anything new in either methods or remedies, but only to have the latter in a convenient form for immediate use.

Messrs. Charles Truax & Co., 81 Randolph street, Chicago, manufactured and filled the case for me, and succeeded in making a very desirable case, one that is neat, compact and durable.

1920 Indiana Ave., Chicago.



INHALATIONS OF MURIATE OF COCAINE IN WHOOPING-COUGH.

BY A. Y. P. GARNETT, M.D.,

OF WASHINGTON, D. C.

In the *Medical Record* of July 31st, we find a résumé of the most modern methods of treatment for this disease, embracing a brief notice of the remedies used by several German, Spanish, French and Brazilian practitioners of distinction, with reported results as late as the present year; each claiming for some particular agent, specific virtues in modifying or curing this intractible and distressing malady.

Whilst the remedial agents employed by these gentlemen differ materially in their therapeutic results and topical effect, their use has obviously been predicated upon the theory that the disease is purely a local one and amenable to local treatment only. Hence we find insufflation through the nostrils, sprayings and pencilings to the throat and pharyngeal surface, the principal methods adopted for the topical application of these remedies. In one instance only have we observed the practice of inhalation mentioned and that of Dr. P. Sertoli reported in the *Revista Clinica é Terapeutica*, of June, 1886.

This writer extols the effects of iodoform and spirits of turpentine in whooping cough and claims that by the use of these remedies through inhalation he was able to diminish both the frequency and severity of the attacks. In January last I had under my care two cases of pertussis, one a child of five and one of two years of age. The children were seen,

one in the second and the other in the third week of the attack, both suffering with all the distressing phe nomena incident to a full development of this disease. Many of the ordinary and some extracrdinary remedies had been used without in any degree mitigating the severity of the paroxysms. Sympathizing with the unhappy mother, as well as the little sufferers, I resolved to employ, if possible, some hitherto untried agent that in my judgment might afford immediate relief. With this view I determined to try the use of hydrochlorate of cocaine by inhalation, and in order to procure it in a form sufficiently volatile to be readily vaporized selected chloroform as the solvent. A six per cent. solution of muriate of cocaine in chloroform was prepared and ten minims poured in a wine glass made warm by tepid water was placed under the patient's mouth, whilst the mother was directed to keep the nostrils closed. No difficulty was experienced after a few trials in getting the patient to breathe in the vapor, which seemed to produce rather an agreeable effect than otherwise. This practice was repeated every four hours and whenever it was possible to do so, immediately preceding or at the outset of a paroxysm of coughing, in the latter instances using double the dose of the solution. It was found that by this means many of the paroxysms were arrested entirely or materially cut short, and, although the treatment seemed to fail in curing the disease or shortening the usual period occupied by its three stages, it certainly altered and mitigated the severity and distress of the paroxysms.

The present epidemic of whooping-cough in Washington, which commenced in the month of June has afforded me ample opportunity of multiplying my experiments with the use of the chloroform solution of cocaine, the result of which has confirmed the conclusions, of its marked effect, arrived at with my first two cases in January. Some difficulty is usually encountered in administering the remedy by this method with very young children, in which event the ten or twelve drops may be poured upon a handkerchief, which can be substituted for an inhaler, the latter instrument being easily managed by elder children.

Whilst I am aware of the popular theory which attributes the origin of pertussis to the presence of specific micro-organisms or parasites, and recognize its power of self-propagation and contagious character, I am inclined to regard it as entirely a neurosis, tracing the initiatory morbid impression or manifestation to those nerves which are distributed to the laryngeal mucous surface, resulting at first in functional disturbance of the vaso-motor nerves, impaired innervation and local irritation; that this condition, although resembling in its pathological and physical features ordinary catarrhal affections of this organ, is essentially different and due to some specific cause, is shown by the fact that ordinary laryngitis and bronchitis are never attended with the pathognomonic spasm of whooping-cough. The additional evidence of its nervous origin and complications, especially with the pneumogastric, may also be found in the distressing vomiting which accompany the paroxysms of coughing. The hyperæsthesia, hyperæmia and turgescence of the mucous lining of the larynx and trachea consecutive to and consequent upon the primary nervous disturbance, in the second stage, is followed by a metamorphosis of cell products, copious secretions and slight tissue changes. The bacteria, micrococci and other micro-organisms found in these secretions, are in my opinion the *post hoc* innocuous products and not the causative agents, of the disease. The "contagium vivum," or materies morbi has not yet in my judgment been clearly demonstrated. The fact that infants have been born with whooping-cough contracted during fœtal life would seem to show that the cause producing this disease is not always extraneous. Taking into consideration the local manifestation of this disease with the morbid conditions which we find in the lining membrane of the upper air passages in connection with the known action of cocaine upon the terminal extremities of arteries and nervous filaments, we are forced to acknowledge that it possesses in an eminent degree the power to fulfil the indications presented in the treatment of whooping-cough.

Topically applied to the inner surface of the larynx and trachea, the sentient nerve filaments are temporarily benumbed or anæsthetized, the peripheral arteries are diminished in calibre and secretion greatly checked, whilst the lining membrane of the larynx is reduced in vascularity. No other remedy yet suggested possesses the capacity to exercise in so potential a degree these several therapeutic desiderata.

In assuming to doubt the correctness of the theory that this disease owes its origin to a specific germ or microbe, I am aware that I expose myself to the criticism of a large number of my professional brethren, since it has become the fashion to attribute every disease to some special or specific micro-organism whose all-pervading and omnipotent influence is not alone confined to the rôle of pathogenesis, but according to some of the more enthusiastic micromaniacs, are essential components of the atmosphere we breathe, equal in life sustaining qualities to oxygen itself. Nothing can be more gratifying and satisfactory to the medical mind than such a theory. It explains everything and furnishes a plausible solution for many of the most difficult problems encountered by pathologists. I have no doubt that these investigations which are now being prosecuted with such ardor and zeal are destined to develop in the domain of microscopy both marvelous truths and phenominal fallacies, either or both of which will be eagerly accepted by the profession at large, and he who may have the temerity to reject either, will in their estimation most assuredly "Write himself down an ass." I think I see in the near future established here in Washington, a National Health Department, with a Bureau of Prophylaxis attached, whence there will be issued daily bulletins warning us of the approach of zymotic or epidemic waves of deadly microbes of yellow fever, scarlet fever, diphtheria, with as much accuracy as the Signal Bureau now predicts the advent of those thermal frigid waves which alternately cremate or freeze the inhabitants of this section of country.

MEDICAL PROGRESS.

SUBLIMATE INJECTIONS IN GONORRHŒAL CYSTITIS.—The history of an obstinate case of gleet and cystitis is given in *El Dictamen* by SEÑOR GARCÌA ANDRADAS, which after being treated unsuccessfully by means of injections of nitrate of silver, yielded very quickly to injections of corrosive sublimate. The patient, who was a river fisherman, contracted gonorrhœa, which was treated for a month with balsams and astringent injections. The discharge then became serous, and exquisitely painful vesical tenesmus supervened, the calls to urinate being so frequent as to give the man no rest. An attempt to pass an instrument occasioned the greatest agony when it came in contact with the prostatic portion of the urethra. The diagnosis made was that of acute prostato-cystitis consequent on gonorrhœa, and so the local application of a sublimate solution appeared to be the most rational treatment, as it had in the author's hands proved very beneficial in cases of subacute cystitis due to the same cause; but it was thought well to try first Guyon's treatment. With great difficulty, owing to the extreme sensitiveness of the urethra, an elastic catheter was passed to the prostatic portion, and 10 grammes of a 1 per cent. solution of nitrate of silver injected. A few minutes afterwards urine was passed with great pain, so a warm bath and an opiate were ordered, which gave only temporary relief, the opium having to be repeated at night. The next day the patient's condition was the same as it had been before the injection. Three or four days afterwards a similar injection was given, with no better result. Four days later, as there was no improvement, the use of sublimate injections was commenced. The catheter was passed as far as the prostate, and 45 grammes of a 2 per mille solution of sublimate in warm water were injected. This the patient was compelled to retain for three minutes; the subsequent micturition was very painful, but at night he was able to rest and retain his urine for three hours. The next day the urine was less turbid, and it was voided less frequently. His condition continued to improve for three days, when a second sublimate injection was given of double the quantity of solution. This occasioned some pain, but it quickly passed of and the patient was able to rest. In four days' time he requested to be discharged, as his urine was clear and he had no pain on micturition. Thus, the author remarks, two injections sufficed to cure completely an affection usually most obnoxious to treatment of an ordinary kind. The superiority of sublimate injections has shown itself in several cases of a somewhat analogous character in which he has employed it. These he proposes to publish and discuss on some future occasion.—*Lancet*, August 21, 1886.

ANTIPYRIN AS AN ANALGESIC IN HEADACHE.—DR. JOHN BLAKE WHITE, Physician to Charity Hospital, New York, says:

During the past two years I have abundantly tested the therapeutic value of the drug known as antipyrin in various forms of headache. The prompt relief obtained through its use compels me to accord to it a high rank among our medical resources. I have already called attention (*Medical News*, July 10, 1886) to the potent antipyretic power possessed by this remedy in the management of various forms of fever, and have observed that after its administration the urgent symptom of headache, so uniformly present in these cases, was soon controlled.

Antipyrin undoubtedly possesses bradycrote properties in a high degree, as the pulse is notably softened and moderated in frequency soon after a proper dose of it has been taken. It produces some somatic change favorable to a reduction of the pulse in cases of fever, and so exerts a calming influence upon the vaso-motor system. The capillaries, through its agency, doubtless dilate, and local congestions are dissipated, as the relieved patient usually sinks into a refreshing repose soon after its exhibition. In the course of large experience with antipyrin I have found that, when administered in masterful doses, it not only promptly relieves the symptom of headache whenever present, whether resulting from disordered digestion, disturbance of the menstrual functions, loss of sleep, undue mental effort, or even that associated with dreaded uræmia, but also possesses reliable prophylactic virtues against recurrent attacks of cranial neuralgia. So confident am I of the power of this remedy to disappoint neuralgic headache when imminent, that I have instructed many patients, who are liable to such visitations, to keep in readiness and take a dose of antipyrin as soon as they have premonition of its recurrence, and all so far testify in favor of its efficacy.

The value of this remedy in the above respect has not only been tested in my hospital and private practice, but I also record the fact that it has proved successful in the hands of professional friends, upon whom I had urged its employment for the relief of neuralgic affections of the head and face. I have been singularly impressed with the promptness of relief which often followed the administration of even a single dose of fifteen grains of the antipyrin. The grateful relief from headache usually ensues within half an hour after the drug is taken. A sense of drowsiness ordinarily supervenes, followed by a brief but sufficient slumber, and the patient awakens quite relieved of this distressing symptom. I have never yet seen the sleep-disposing properties of antipyrin alluded to by any other observer, although this effect seldom fails to ensue when a full dose such as I have named has been taken.—*Medical Record*, September 11, 1886.

A STUDY OF SOME NEW PURGATIVES.—DR. DESNOS has been making a study of the physiological effects of the following four new purgatives: baptisine, sanguinarine, juglandine, and phytolaccine. He has given these purgatives to 48 different individuals in the following proportions: Baptisine to fourteen, sanguinarine to four, juglandine to thirteen, and phytolaccine to seventeen. They were given in pill form in doses of 10, 20 and 30 centigr. (1½, 3, and 4½ grs.). The first dose was administered at 10 A.M. and the second dose at 10 P.M. The four drugs

had the common property of causing no disturbance whatever in the stomach. In some of the cases purgation occurred after the first dose, in the majority of cases not until some hours after the second dose, and in a few cases of obstinate constipation no effect followed until an enema had been given. Baptisine proved to be an efficient cholagogue, and excepting a few failures in patients who were in bed, it showed itself a faithful purgative. The dose employed ranged from 10 to 30 centigr. (gr. 1½–4½). Sanguinarine did not fulfill the expectations derived from experiment with that drug. The author has given it in as large a dose as 60 centigr. (gr. 9) with negative results only. Juglandine exhibited marked cholagogic properties in doses of 10 to 20 centigr. (gr. 1½–3). Phytolaccine is also an efficient cholagogue in the same doses as the preceding. The author prefers it to all the others. It produced easy and copious stools containing considerable bile. In large doses it provoked vomiting, followed by depression, and in a few cases even by convulsions. In conclusion, the author states that baptisine and juglandine are destined to render incontestable service as laxatives in spite of some inconveniences, and that phytolaccine, being most certain and attended with fewer inconveniences, will form a valuable acquisition to the therapeutics of constipation. Sanguinarine, on the other hand, does not deserve to come into favor.—*N. Y. Medical Journal*, Sept. 11, 1886.

COCAINE POISONING.—Dr. Lucas Champonnière's *Journal de Médecine et de Chirurgie* for last month devotes an article to cases of poisoning by cocaine, based on researches of M. CHATELLIER. The employment of the valuable remedy is not contraindicated by the occasional manifestation of toxic effects, nevertheless it is important to know them. In a case cited by Dr. Speer, a man was in the habit of self-injecting cocaine to combat the effects of drunkenness. The action closely resembled opium poisoning, but the patient recovered under appropriate treatment. A woman, aged 25, to combat hay fever, had a watery solution containing 15 centigrammes of hydrochlorate of cocaine injected into the nose. In about twenty minutes she became giddy, was oppressed by a sense of weakness, and could not see distinctly. A little later she was in a semi-comatose condition, pulse not countable, slight dyspnœa, pupils dilated. These symptoms disappeared in the course of three hours under the influence of internal stimulants and external friction. Dr. Ziem, of Dantzic, reports that he injected under the conjunctiva of a man, aged 40, 2 drops of a 40 per cent. solution. In the course of a few minutes the patient became pale, the forehead bedewed with sweat, and respiration embarrassed. He states that seventeen cases of cocaine poisoning have been reported by oculists. In three the agent was injected hypodermically; in fourteen merely into the conjunctival cul-de-sac. The usual symptoms are pallor and clamminess of the face, vertigo, and great prostration, sometimes lasting for days. Headache and vomiting are infrequent. In one case, after sub-conjunctival injection of 15 drops of a 2 per cent solution, the gait became uncertain, articulation indistinct, and memory lost. In another case subconjunctival injection of 8 drops of a 3.5 per cent. solution produced loss of consciousness and convulsions. M. P. Tissier relates the case of a child, aged 4, affected with whooping-cough and coryza, whose nasal fossæ were pencilled with a 1 in 30 solution of hydrochlorate of cocaine. In the afternoon the eyes became distorted and the child convulsed, but these symptoms disappeared without treatment. —*Lancet*, August 21, 1886.

SALICYLATE OF LITHIUM.—PROFESSOR VULPIAN remarks that this salt is as efficient in acute rheumatism as salicylate of sodium, and, further, that it is also efficacious in acute gout. In a great number of cases of acute rheumatism salicylate of sodium relieves the acute pains, but the joints remain slightly painful and difficult of movement. In these cases salicylate of lithium substituted for the sodium salt will complete the cure. Again, in those cases of acute rheumatism in which the fibrous tissues seem most implicated the lithium salt will be found more beneficial than the sodium salt. In that form also in which the subcutaneous tissues seem involved, salicylate of lithium has proved more useful than any other drug. Even in chronic rheumatism in which the joints are deformed and partially ankylosed, salicylate of lithium has shown itself of some value.

For an adult the dose should be 4 grammes (℥j) per diem, which may gradually be increased to 5½ grammes (℥iv, gr. iij). Larger doses are followed by symptoms of intolerance. Salicylate of lithium is soluble in water and has a pleasant taste. It contains more salicylic acid, proportionately, than salicylate of sodium. Like the latter salt, its administration is attended with unpleasant symptoms, which, however, do not attain to the same degree. These consist of a more or less severe headache, dizziness, and difficulty of hearing, without noises in the ears, as in the case of the sodium salt. Occasionally it produces colic and diarrhœa—symptoms never observed with salicylate of sodium. The latter symptoms must be attributed to the lithium and not to the salicylic acid.—*N. Y. Medical Journal*, Sept. 11, 1886.

TREATMENT FOR HYSTERO-MANIA.—DR. A. L. HODGDON, of Farmwell, Va., says: The following formula I have found useful as a calmative in hystero-mania (hysterical insanity):

℞	Extr. cimicifig. fluid	℥	jss
	Extr. vibur. prunifol. fluid	℥	j
	Extr. conii fluid	℥	j
	[1]Tinct. cannab. indic	℥	iss
	Syrup	℥	x M

Sig.—Two teaspoonfuls three times a day, and see that its components are thoroughly mixed before exhibiting.

Two of the ingredients of the formula before mentioned—the hemp and the hemlock—are of notoriously uncertain strength. Hence the proportion of each of these drugs to the rest of the prescription must always be governed by their respective strengths, and the mixture should never be administered excepting with extreme caution, carefully watching its effects.—*Maryland Med. Jour.*, Sept. 18, 1886.

[1] The tincture of hemp used in the formula was made from the English extract and alcohol, in proportion of ℥i of the extract to ℥ii of alcohol.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 9, 1886.

TUMORS OF THE BLADDER, AND THEIR TREATMENT.

In Volkmann's *Sammlung klinischer Vorträge*, Nos. 268–269, is a most interesting article on this subject by PROFESSOR ERNST KUESTER, of Berlin. Vesical tumors may be conveniently classified under the two heads: Neoplasms of the Prostate, and Neoplasms of the Bladder-wall; and of the latter we may distinguish three great divisions: First, those arising from the mucous or submucous connective tissue; second, those arising from the muscular layer of the bladder; and third, neoplasms of the epithelium and glandular structures of the bladder. We may also say that there are three subdivisions of the neoplasms arising from the mucous or submucous connective tissue of the bladder-wall: *First*, the papilloma of Krämer or the fibroma papillare of Virchow, which is certainly the most frequent of all the tumors of the bladder, and may appear singly or grouped. When single they are more frequent in the fundus vesicæ, then in the trigonum, and finally in the lateral walls, near the ureteral orifices. In very rare cases they have been found in other parts of the bladder, but then mostly as groups, several small ones being found around one large polypus. We need not here go into the microscopical details of the papillomata, which are given so elaborately by Küster.

In the *Annals of Surgery*, for September, 1886, Mr. C. J. Colles has written a most admirable review of this question of tumors of the bladder in connection with Küster's paper. It will be remembered that Sir Henry Thompson has described a transition form of vesical papilloma (to a malignant growth), which is characterized by rich vascularity and cell-infiltration in the tissues around its base, which is probably due to inflammatory irritation. The villi are so delicate that the stream of urine during micturition is sufficiently strong to tear them away and cause frequent hæmorrhages. "The delicate construction of the inadequately supported walls of the blood-vessels in these villi is often also the cause of hæmorrhages. Every contraction of the bladder-muscles must compress the blood-vessels at the base of the villi, producing, consequently, hyperæmia of these, and leading easily to rupture of blood-vessels. These formations, by becoming incrusted with urinal salts, may deceive one as to their real nature, as they are often taken for vesical calculi." Papilloma, as we know, is more frequent in males than in females; and this is probably due to the greater and more frequent irritation to which the bladder of the male is subject from the extension of inflammation from the urethra, any it may also be partly due to the greater difficulty in urination among men of middle and advanced age than among women of the same age; and this theory is supported by the fact that most cases occur between the ages of 30 and 60 years.

Fibrous polypi and myxomata are tongue-like or bulbous formations occurring in the region of the neck of the bladder and its base; not occurring in groups, as papillomata, but seem to be spread out over the mucous surface. They seldom cause hæmorrhages, as they are comparatively tough in structure. They occur most frequently in children. Sarcoma of the bladder is very rare, only five cases having been carefully observed and described. It usually occurs in females, as was the case with the five cases just alluded to.

Of the neoplasms arising from the muscular layer of the bladder Robert Knox first described, twenty-four years ago, and recorded a case of myoma. It was not until ten years ago, however, that a case of undoubted myoma of the bladder was thoroughly described, by Volkmann. The tumor was a considerable distance from the prostate, a fact which excludes any possible connection with this gland; and in the cases published previously there was some reason to suppose that the tumor was in some way connected with the prostate. In structure these tumors closely resemble myomata of the uterus. Five years ago Dr. W. T. Belfield found, by accident, myoma of the bladder in two dead subjects.

Under neoplasms of the epithelium and glandular structures of the bladder are included adenoma, carcinoma, and dermoid cysts; of these it is only necessary to speak of carcinoma. "Clinically carcinomata of the bladder are not distinguishable from those of

the prostate, so that the latter will have to be considered in this group. Careful study only of the microscopical structure will reveal the real starting-point of the tumor. This latter is of importance not only from a pathologico-anatomical standpoint, but also as regards the diagnosis and the therapeutic measures to be undertaken." It would be of vast importance, says Küster, if Kleb's assertion were true, according to which all carcinomata of the bladder originate in the prostate gland; by which a primary tumor of the fundus of the bladder in a female subject could not possibly be a carcinoma. The appearance of this form of tumor in the region of the neck of the bladder in male patients will naturally arouse suspicion as to its origin. There can be little or no doubt that many of the cases of so-called carcinoma of the bladder are but secondary growths from the prostatic carcinoma; but it must be admitted at the same time that primary carcinoma of the bladder does occur; and we may agree with Küster in thinking that it would be very remarkable if the mucous surface of the bladder, which is so much exposed to irritation, should be so very different from other mucous surfaces as not to be subject to carcinoma. Indeed, Bode has shown that primary carcinoma of the bladder in females is not so very rare, as there were 14 females among his 30 collected cases. "The form of carcinoma most frequeutly met with here is the papillary, although the medullary form is not seldom seen, cases of the latter having been recorded by Marchand and others. The cancroid form has been often observed by Thiersch, Paget, Winckel, and Thompson, and the alveolar carcinoma, with its singular tendency to colloid degeneration is also occasionally found. All these forms of carcinoma, including also the glandular form occurring in the prostate, develop first as flat circular protuberances on the mucous surface or as more deeply lying lumps with a smooth surface, immovable over the tumor. Various changes in their appearance soon occur, in consequence of the irritation to which they are more or less exposed. Hæmorrhages soon follow, but in many cases precede the development of a cancer. The surface epithelium becomes necrotic and falls off, allowing the urine to come directly in contact with the badly nourished cancer-body which is prone to regressive metamorphosis. Putrid decomposition of the urine follows, producing rapid necrosis of larger or smaller portions of the tumor, keeping the former, in spite of frequent micturition, in a decomposed state. Cattarh of the bladder is the result, and the hyperæmic mucous membrane is consequently prone to hæmorrhages. The mucous layer of the bladder is soon attacked, its hypertrophied condition, however, generally preventing rapid perforation. Through extension of the purulent inflammation upwards the kidneys become involved, and death soon intervenes."

In a very large number of cases tumors of the bladder develop without marked symptoms, and their existence may not be suspected until a patient, hitherto believed to be perfectly healthy, begins to pass bloody urine. We say *suspected*, for it is important to differentiate hæmorrhage from the bladder from that proceeding from other portions of the urinary tract. In cases of renal hæmorrhage the urine and blood are generally evenly mixed; but this may be the case when slight hæmorrhage of the bladder has taken place and the blood remained in the bladder long enough to be thoroughly mixed with the urine. In the early stage of tumors of the bladder the stream of urine is at first ordinarily clear, but gradually becomes bloody, and finally the stream is only pure blood. The passing of particles of the neoplasm with the urine is a very important symptom, and very large quantities may be passed in a short time. It seems scarcely necessary to say that a microscopical examination of these particles will determine the nature of the tumor. Other symptoms are disturbances in urination, slight or severe pain, frequently a heavy, bearing-down sensation in the perineal region, and a frequent desire to go to stool. Of course there is catarrh of the bladder after the disease has existed for some little time, accompanied by chills and fever. "The general form and consistency of a tumor of the bladder may be usually determined by palpation above the symphysis and through the rectum, in women through the vagina. The introduction of instruments should be undertaken with care, as catarrh often results from this procedure." The catheters should be thoroughly asepticized, and the glans and orifice of the urethra should be thoroughly cleansed in every case before introducing instruments. A good instrument is a catheter having a long opening near its extremity on the under side, which may be used as a scoop, pulling off portions of the tumor. Little, if any, bleeding will be caused by this instrument. As a means of further diagnosis endoscopy may be employed. Mr. Colles seems to attach but little importance to digital examination of the bladder in these cases, which, nevertheless, must be regarded as most important, as has been shown more recently by Dr. Belfield (see THE JOURNAL, Sept. 4, 1886.)

Even benignant tumors of the bladder threaten the life of the patient, and they should therefore be removed. A tumor with a thin pedicle may be twisted off, as has been done by Volkmann; or they

may be removed by means of a scoop passed into the bladder along the finger, as is done by Kocher. There is considerable danger of injury to the bladder and other parts attending the use of Thompson's denticulated forceps. Sometimes, especially in females, we may draw down the tumor far enough to see plainly its point of attachment on the vesical wall, in which case it may be cut off and the wound closed with sutures, so as to prevent hæmorrhage. If the tumor be favorably situated this may be done by dilating the urethra in the prostatic portion after a median incision. There are many cases, however, in which it will be necessary to open the bladder above the symphysis, or through the vagina. "Epicystotomy is without doubt the best of all methods of removal in both sexes, and gives the most complete survey of the interior of the bladder." As now performed, by filling the bladder with some aseptic fluid before the operation, or making the incision slowly and carefully, dividing the tissues layer by layer, there is no danger of wounding the peritoneum. Petersen injects from 400 to 600 grams of fluid into the bladder and then introduces a colporynteur containining about 400 grams of warm fluid into the rectum, which forces the bladder up over the edge of the symphysis, and thus almost precludes the possibility of injury to the peritoneum. To prevent infiltration of urine into the surrounding tissues careful drainage must be carried out; the urine must not be allowed to collect in the bladder and flow out through the wound. A good method of drainage "is to pass a rubber tube, having lateral apertures, through the wound and out through the urethra; at the same time plugging up the abdominal wound with pieces of iodoform mull."

Guyon's use of the thermo-cautery seems to have, thus far, but little to recommend it; the wound will be long in healing, and will prove a source of catarrh. Küster prefers an elliptical cut around the tumor, and then uniting the edges with catgut sutures. In dealing with deep-seated tumors we may employ Trendelenburg's method, which consists in suspending the patient, head downwards, by his legs over the back of an assistant, and turning towards the light so that it shines directly into the bladder when the edges of the wound are separated. The viscera sink, and the parts hid behind the symphysis come into view. Schede has shown that a catheter may be placed in each ureter, to carry away the urine and prevent its collection in the bladder—a very important point in the after-treatment of these cases. Thin, elastic bougies are probably better for this purpose than Simon's metal catheters.

PRACTICAL IMPROVEMENT IN THE ORGANIZATION OF THE AMERICAN MEDICAL ASSOCIATION.

Observations during the recent meeting of the British Medical Association demonstrated the decided superiority of having a smaller number of addresses read before the whole body in general session, and those prepared by parties appointed solely for that purpose, while the President of each Section read an address before his own Section. It was very evident that one well prepared address was listened to with greater attention and by a larger number than would have been two or three in succession at each general session. Again, if there be but one address on the programme for each general session, the certainty of its being listened to and perhaps criticised, stimulates the writer to greater care and wider research in its preparation.

The fact that the annual meetings of the American Medical Association continue, like those of the British Association, only four days, and but one general session each day of about three hours, shows that not more than one hour each day can be devoted to an address and leave any adequate time for the transaction of general business. And as the hour of the first day's general session is occupied by the address of the President of the Association, but three important addresses can be properly provided for in the three subsequent general sessions. And yet the by-laws of the American Association provide for eight Sections, and the Chairman of each is required to deliver an address in the general session on the topics embraced in the Section over which he presides. This makes three addresses for each of the general sessions of the second and third days, and two for the fourth, which is so obviously wrong that a change is demanded.

During the last two or three annual meetings no less than three of these addresses have been crowded into the general session of the last day, and none of them read much beyond their titles. Such results are unsatisfactory and unjust to all the parties concerned. On the contrary if the Chairman of each Section was required to prepare the same kind of an address as at present and deliver it in his own Section, not all at the same hour or necessarily on the first day that the Section meets, but as far as practicable at different hours and days specified on the programme, thereby giving opportunity for the largest number to attend the Sections at these times, it would contribute much to the interest of the work of each Section, and increase the number in attendance. Such appeared to be plainly the practical result of

the plan in the British Association at Brighton; and we commend the subject to the consideration of the committee on improvements in the plan of organization, appointed at the annual meeting in St. Louis, in May last.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Sept. 20, 1886.

J. F. TODD, M.D., SECOND VICE-PRESIDENT IN THE CHAIR.

DR. N. S. DAVIS gave his

IMPRESSIONS OF THE BRITISH MEDICAL ASSOCIATION.

An abstract of his remarks is as follows:

The British Medical Association held its recent meeting at Brighton, the most fashionable and desirable watering place in England, very favorably situated for such a meeting of the profession of that country, being accessible to London as the great central point and having accommodations that probably cannot be found in any other town or city of moderate size in Great Britain. The British Association impresses one as being a body of men more advanced in life with more solidity than our assembly, not more intellectual development but more of what you might call sturdy physical development. Indeed this impression of solidity is forced upon the mind about everything. We excel them very much in exterior ornamentation, variety of architecture and in a great many ways, but for an impression of solidity and steadiness without haste, as an ordinary rule they excel us.

The British Medical Association is not a representative body in any sense, but was composed originally much after the fashion of calling together an assembly, organizing a national body and selecting a certain number to constitute a council and submitting the business affairs to the council. Subsequently a rule was adopted by the original council qualifying the profession in any given locality to form a local society and adopt such rules as were not in opposition to the constitution and by-laws of the national society; these societies were recognized as Branches, and each member of a Branch became nominally a member of the general body with the right to attend the general meeting, but they are not entitled to take part in the general government. They may elect one, two or three members of the council, so that as Branch after Branch has been organized, and the membership increased, it has greatly enlarged the council, until, I gather from the proceedings of the Association the council of the British Medical Association numbers seventy-one. This council has the entire control of the organization; they determine the places of meeting, and all matters in reference to the workings of the organization come before them first. Certain matters are brought before the general body at their meeting for their sanction, but they must originally go through the council. The council has at least four stated meetings in the year; they meet every quarter, and if business of importance is to come before them they may have other meetings. At the annual meeting of the Association the programme is so arranged, that when they open at half-past twelve (they do not hold sessions in the forenoon), the council holds an hour's session, that is the meeting of the council of the preceding year. New members of the council are elected by the Branches yearly, so that new members come in each year and others go out, and the council is not always made up of the same parties. Following this meeting, two o'clock is appointed as the time for the meeting of the general body, but that did not occur this year; it was crowded out. At a subsequent hour we had what they call the council of the present year. The first meeting was the council of 1885, the next, council of 1886. The Sections held no meetings the first day. I watched the proceedings carefully with special reference to learning what might be of use to our own National Association. One of the complaints made against us is that we lose too much time in eating and drinking, and social occasions, and too little advance is made in real science and professional knowledge. The meeting of the council was held with closed doors. This peculiarity runs through everything, the council not only prepares the reports on business matters, but when they are submitted to the general body the council designates the man to move its adoption and the man to second motion. I do not think that would be tolerated in America over one meeting, but it is a uniform, regular custom there and they seem to take it very easy.

The three Sections that had the largest attendance were Medicine, Surgery, and Public Medicine. They have the same trouble there as here, there is a certain class always coming and going. They come in and sit down, and if at a little distance they can't hear very well, they sit a little while and don't get enough of the run of the thing to interest them and they go to another Section, so they are always moving about. Of the Pathological and Laryngological Sections, one was held in the bedroom of old King George and the other in his china closet, a cupboard capable of seating not more than twenty or thirty people, and these seats were not full. While the attendance does not exceed our attendance there is about the same shifting and changing as at our general meetings. But the papers that were read had this characteristic to a greater degree than can be said of the papers as a whole with us, those who read papers had taken more pains to prepare them carefully and to make them cover the ground fully. They had spent more labor in their preparation. There was another feature—until the last three meetings there has not been any attempt with us to have parties informed of what particular papers are to be read in any of the Sections, so that they might be prepared to lead off in the discussion of the papers. In 1883 in the Medical Section there had been pains taken to do this; certain papers were to be read, and several parties in different parts of the country were informed that a paper would be read on a certain subject and they were as-

signed to lead in the discussion. The idea was to make the discussions of more value. This same course has been taken in a limited degree in our meetings since. It is a general practice in the British Association. The officers of the Sections when they learn what papers are to be presented judge as far as practicable who can impart interest, and have them informed of the general import of the paper and ask them to lead the discussion. Hence, they elicit genuine benefit from the papers that are read and from the discussions that follow. Many papers were prepared that were not read; undoubtedly they will find their way into print as they do with us; the title was read and referred without anybody's knowing of what they were made. Sometimes they are made of an abstract, the author thinks he will write it out, but fails to do so. I think in their work they are more deliberate, more complete, they exhaust a subject more nearly, and they endeavor to have the discussion so conducted as to elicit the most information from it. In studying their work as a whole it seemed to me that there are some things we might copy with advantage.

Some member may be here who remembers the proposition made in our own National organization years ago when the Sections met and chose their officers. A proposition was made to change the by-laws so that the officers of the Sections should consist of a president and secretary selected at each annual meeting for the next year, so that there would be officers already elected and the organization of the Section would be perpetuated. I remember that the late Dr. Gross made this motion, that instead of having reports from standing committees on medical education, medical literature, and so on, which we had had previously, these committees be dropped and in their stead the Association select at each meeting men supposed to be qualified for that especial work, in order to present an address to the general assembly, one on medicine, one on surgery, and one on obstetrics and diseases of women and children. That differed from the British programme only in substituting obstetrics and diseases of women and children for State medicine, but it was designed for the same purpose, to have one carefully prepared address read at each of the three last meetings, one on Wednesday, one on Thursday and one on Friday, while the president of the Association would have an address on Monday especially designed for the general body. I seconded Dr. Gross' motion, but instead of it being carried it was referred to a committee, as was also the proposition to have the officers of the Sections appointed each year for the next, and the next year the committee reported in favor of having the officers appointed for the next year, and at the same time they reported in favor of having the president of each Section present an address to the general body on the improvements in the Section over which he presided. That was a substitute for for Dr. Gross' motion. He and I opposed it on the ground that the presidents of the Sections to be chosen each year ought to be selected from the older men, giving them an honorable position, but yet they would not be the men that would be likely to be adapted to read such papers. However, the proposition of the committee carried. Now we have seven or eight Sections with seven or eight addresses before the general body, and what is the result? We find time the first day for the president's address, but the other days of the general meeting do not afford time enough for all the presidents to read their addresses, they are crowded off to the last day and one-third of the addresses prepared by the presidents of the Sections are announced by title and then go over. They crowd the entire time of the general meeting of the body, and I think it would be a great deal better if we were to change our by-laws and appoint the first day for the president's address, which should be of a high order, covering the general field of medicine, another to surgery and another to obstetrics and gynæcology, or public medicine as you choose. Perhaps for the world at large it would be as as well to sometimes change the order. Then let the president of each Section deliver his address as he pleases on any subject of interest to the Section. This would insure a larger attendance and promote the work of the Section, and yet would not crowd the entire time of the general meeting as it does when we try to get in seven or eight general addresses. That, I think, would be a real and substantial improvement in our body that we might copy from the British Association. And then we might go on perfecting still further the arrangement of the papers and interest parties to be ready for brief discussion.

There has been a good deal said of late years about the work of the nominating committee. The nominating committee is appointed in a hurry by little knots gathered together who want to get through. The committee is hurried to do its business and consequently the business is done very imperfectly. It has been claimed that we ought to have a more steady and conservative body, and the council of the British Association has been suggested as a pattern, but I do not think an organization like the British council would satisfy this country in any degree; I think we would not get along with it two years without rebellion all around. But it seems to me in studying the matter over that we might remove the real evils we suffer from and yet not incur the evils that would follow from attempting to make a permanent council. It has been suggested that it be so arranged that one man would hold his place nine years; instead of that I think all the evils from which we are suffering could be obviated by appointing a business committee to consist of two members from each State in the Union. Let each State Society that is represented in the organization be entitled to two members of that business committee and elect them the first year to hold office two years, and after they get started they would have one to elect each year, so that it would be permanent. By electing a new member each year it would be conservative and not totally changed. All the work that now devolves on the nominating committee would be done by this business committee, and if selected with proper care it would be a convenient committee to which might be referred various propositions that come up, and which require careful con-

sideration by members that represent the whole country.

There is an evil in the British council that is complained of now, they say this council has four meetings a year and they have to meet in London because London is the head centre of Great Britain. The practical working of that is that the profession within a radius of one hundred miles of London controls that council. It costs money to go from Edinburgh, Cork, Dublin or remote portions of England to London, and very few out of the whole number of seventy-one go. I learned that there were seven meetings held last year and thirteen of the members did not attend any of them. Not only that, but the remoter districts have found that their delegates so rarely attend, on account of the expense and loss of time, that half a dozen of them reported that they had not elected delegates. Now if we were to appoint a permanent body four-fifths of them would let their interest die out. Suppose you get up a council that is to meet and transact business three times or even twice a year, how many would be found to go from the Pacific Coast or from the north to a central point? It would not take ten years to gravitate so that your council would be in the hands of those within a hundred miles of the central point of meeting. If you made that Philadelphia or Washington or Chicago, the whole body would be ruled by a territory of two hundred miles, simply because parties would not pay out their money and spend their time to attend. They will not in Great Britain, and they are discussing the propriety of getting up some mode of compensating them to induce them to go. The plan I propose will, I think, after some degree of consideration, be found to obviate all the real evils we suffer from in hasty action and hasty nominating committees, and yet it would always secure us a satisfactory working body that would be reasonably representative of the several States to attend to such things as are required to be attended to, and it would be a standing body of intelligent men to whom we could refer such things as would require consideration. The features that I have mentioned are characteristics that struck me as belonging to the British Association, which differ from ours.

In regard to the International Congress: without solicitation the council of the British Association altered the programme of one of their days and announced that on Thursday at a certain hour the delegates from the American Association would be heard in regard to the International Congress. When the time came the hall was fuller than on any other occasion, the room was packed and through the hallways and along the corridors with people evidently having a decided interest in hearing what we had to say, and as the other Americans insisted on my taking the lead I went on the platform and occupied half or three-quarters of an hour in simple explanation. I made no allusion to anybody's differences except in general terms; we had had our troubles, and our frictions and our errors on all sides, but out of it all had come an organization truly National in its character, made up of delegates from all the States in the Union. This organization appointed an executive committee to which had been transferred all further management of the Congress. This National committee had reported their work to the last meeting of the American Medical Association, and it was unanimously sanctioned, and so I felt justified in assuring them that this met the approval of the profession of the United States, and while we had no royal titles, the President of the United States, the Heads of Departments and the President of the Senate had lent their names as patrons. And I assured them that they would receive as cordial a reception at that Congress as the American profession knew how to give. I would guarantee that they would be met by the intelligent part of the profession of every State in this Union from the Atlantic to the Pacific, and I cordially invited them to come. They received my invitation with the greatest degree of enthusiasm, and after a few remarks from Dr. Pancoast and others, which simply endorsed what I had said, they voted us their thanks and accepted our invitation to meet us in Congress in 1887. Among some of the most prominent men in London and the Provinces there is a warm zeal for attending the Congress. Three or four Americans have been on the Continent for some time and report that in France there is a genuine enthusiasm for attending the Congress. In France they do not pay the slightest attention to any differences we have, and just as far as they imagine there is coldness in England or Germany, the Frenchman comes with the more enthusiasm to make it up.

PROFESSOR W. E. CASSELBERRY read a paper entitled

PHARYNGEAL AND NASAL SURGERY BY THE GALVANO-CAUTERY; WITH REPORT OF CASES AND EXHIBITION OF APPARATUS.

New methods of utilizing the galvano-cautery are constantly being devised and recent improvements in batteries and electrodes, and the introduction of the local anæsthetic, cocaine, have materially extended its field of usefulness. In nasal, pharyngeal and even in laryngeal surgery its utility is particularly manifest. Pathological conditions of the upper respiratory passages, which have long baffled the most skilful therapeutics, are now effectually remedied through the medium of this agent.

Case 1.—Folliculous pharyngitis with hypertrophy in the angles of the pharynx. Dr. —— has suffered from fulness, soreness and pain in the pharyngeal region, culminating frequently in acute pharyngitis with extension of the inflammation to the middle ear. Examination disclosed two enormous hypertrophied follicular masses, occupying the latero-posterior angles of the pharynx, each about three-fourths of an inch in length, of the thickness of a lead-pencil, and jutting inward and forward from behind the corresponding posterior pillar. In the normal state a whole chain of muco-lymphoid follicles ranges along in this location, and it is the hypertrophy of this entire row of glands on each side which is the chief feature in the case.

Treatment.—For the purpose of destroying these growths by the galvano-cautery an electrode was extemporized by uncoiling the wire end of a Flem-

ing moxa-electrode, thus converting the coil into an elongated loop. This was so curved as to accurately approximate the mass. The loop heated instantly to a white heat by the action of the battery, produced its slough with but little pain and no hæmorrhage. After several operations, performed at proper intervals, the growths were entirely removed.

Case 2.—Folliculous naso-pharyngitis or adenoid vegetations at the vault of the pharynx. Operations by the galvano-cautery écraseur. The symptoms were those of post-nasal catarrh. Examination, in addition to morbid conditions of other parts, revealed numerous hypertrophied follicular masses—so-called adenoid vegetations covering and filling up the vault of the pharynx; some of these appeared in the rhiniscopic mirror as pendant pear-shaped bodies, others were sessile, and still others had the appearance of several cockscombs crowded together.

Treatment.—Removal of the hypertrophied masses is the only satisfactory means of relief. This he first sought to accomplish with a Löwenberg cutting forceps, but the effort resulted unsatisfactorily. The cold snare and other methods were tried and abandoned, until finally he found that the object could be attained most easily and with the least pain and inconvenience to the patient by means of a galvano-cautery écraseur. He constructed an écraseur for the case by bending a fine pair of straight tubes, threaded with a platinum loop, to the proper curve to pass behind the velum palati and touch the hypertrophied mass. The naso-pharynx was sprayed with cocaine solution. Guided by the rhinoscopic image he introduced the écraseur and caused it to encircle one of the growths, then connecting the battery, the loop heated instantly to redness, was as rapidly wound in on the windlass, and the vegetation thus severed at its base. There was no pain, no hæmorrhage, and but little subsequent irritation. The operations were repeated weekly until the growths were entirely removed.

Case 3.—Malformation of the anterior pillars of the fauces. The symptoms were a sense of constriction in the pharynx and snoring. The malformation discovered was of the anterior pillars, *i. e.*, of the palato-glossal folds. These originated properly in the velum, but increasing in breadth they covered a considerable portion of the inner surface of the tonsils, and then a part only of the fold continuing in the normal pathway forward to the side of the tongue, the larger portion swept *backwards* and incorporated itself with the posterior pillar, forming a thick band, which continued downward in the latero-posterior angle of the inferior-most portion of the pharynx.

Treatment.—The overgrowth of each tonsil, together with the portion of the anterior pillar which covered it, was excised by means of the galvano-cautery écraseur, and at the same time the abnormal attachments of the anterior pillars to the pharyngeal wall were severed.

Case 4.—Membranous occlusion of the posterior nares. Mr. E. suffered from complete obstruction of the left nasal chamber, most violent headaches, vertigo, left sided deafness and fetor of the breath. A tense membrane was found to cover the left choana almost completely, and another to partially occlude the right choana. These membranes were incised by the galvano-cautery knife electrode, properly curved and introduced from behind. Complete relief to all symptoms. Certainly the galvano-cautery can be abused, and a word of caution is not unnecessary in this respect. Accurate diagnosis, precise indications for its use and a certain amount of skill on the part of the operator are essentials to its judicious employment. The Fleming battery has advantages over any other that he has seen, not the least of which is the arrangement by which the plates may be immersed and withdrawn from the fluid by means of a pedal easily manipulated by one foot.

Dr. F. O. Stockton, in opening the discussion, said: I have listened with a great deal of pleasure this evening to the paper; the cases are all very interesting. It does not seem necessary to spoil an electrode in order to make one for a special case; it seems to me that the ordinary flat electrode, by simply bending it down, would answer the same purpose. The trouble is we must have new instruments for every case that comes up. Unfortunately all practicing physicians, many of them who understand the throat and nose, are not so situated that they can run into an instrument maker's establishment at any time and have an electrode made, and I think it is wise to keep down to the standard instruments which can be bought at any time and which are always at hand. Another point I would like to speak of is the idea that follicular pharyngitis and adenoid vegetations are one and the same thing. Some authors consider them the same and others do not. Bosworth, of New York, claims that follicular pharyngitis and adenoid vegetations are one and the same. The battery which Dr. Casselbery shows is the one I have used in my practice for three years. I have tried a number of others and found this one the most satisfactory. A short time ago I saw a modification of it which I think is a little better; it was devised by Dr. Sajous, of Philadelphia, but it is not on the market at present. Many of our prominent writers have rather discouraged people from using the galvano-cautery, as they say it requires a great deal of skill, and knowledge not only of the anatomy of the part we are working upon, but also of electricity and the management of instruments. Dr. Morell Mackenzie, of London, makes that objection to the galvano-cautery; in fact he says that all, or nearly all, the operations can be performed by simpler means. Dr. Cohen, in his last work, also refers to the difficulty of managing it, but I think if they had used the instruments of to-day they would not have found that difficulty.

Dr. H. T. Gradle said: The speaker's paper was so complete there is nothing left for comment except to deviate from the subject and take excursions into neighboring parts. It has been mentioned that galvano-cautery is not absolutely necessary. That may be true as far as the pharynx is concerned, but in the nose it is not. It would be almost impossible to do the same work as steadily by any other instrument, on account of the excessive hæmorrhage that would occur; these cases are unmanageable except with

the cautery, and in most instances we can obtain relief both of local symptoms and obstruction of the nose, as well as the nervous symptoms maintained by the excessive turgidity. The question was asked whether hypertrophy of the pharyngeal tonsil could be identified with follicular pharyngitis; I should say not. We may have one or the other, but the follicles in the disease called follicular pharyngitis are much below the level of the gland. I have often found the gland hypertrophied into a very solid mass of about the consistency of the tonsils. The hypertrophy may of course have any extent; it may be so slight as to leave room for doubt of its existence, while in other cases it is impossible to gain any view of the posterior choanal. In such cases nothing can be thought of but operation. I have used the cautery in the form of a white hot knife or hot snare for hypertrophy of the pharyngeal tonsil, but not satisfactorily. Where we have a distinctly pedunculated tumor it will do well enough to use the hot snare, but where the tonsil is hypertrophied into a solid mass not at all movable with the probe, I have found very little success with the battery, except that its removal is not so painful as by other means. I have at last settled down on the method suggested by Trautman, viz., a sharp curette, as sharp as the instrument-maker can make it, the shank of which is bent at an angle of 140°. The operation is a barbarous one as far as appearances go, because it requires force. There is pretty free hæmorrhage, but the pain is not very great. Unless the person is pretty tolerant it is not easy to remove the entire tonsil in one sitting, but in children I have not had any greater difficulty in coaxing them to the second sitting than I had at first. The results are extremely satisfactory, especially in cases of ear disease entirely due to this trouble. I have had considerable experience with different forms of battery; the kind which I should prefer and recommend is an accumulator, if a wire can be had from some electric light plant. I can speak well of the Mackintosh battery, but I prefer one in which the carbon plates are made of the electric light sticks. They are much harder than the ordinary carbon plates, and we can easily get a very large surface in the battery.

DR. R. TILLEY said: I have had some experience with the cautery and with batteries. I am now using the form of battery Dr. Gradle has referred to; I have the two cells attached so that I use them together, and have them so arranged that I can lift them up with a crank; they are thus very easily manipulated. I have used this battery for about eighteen months, and it has always given me satisfaction. I would like to speak of a slight modification in the fluid which I have recently used; it consists in the use of bichromate of soda instead of bichromate of potash; the advantage is that when the fluid has been used for a considerable length of time, in using the potash there is always formed a large number of crystals in the bottom of the cell, which are very hard and require quite a little time to remove, and which are so closely connected with the cell that there is more or less danger of breaking the glass. In using soda instead of potash this does not occur; the compound thus formed is so soluble that no accumulation is formed at the bottom of the cell. I appreciate Dr. Stockton's remarks in regard to the increase in the number of instruments; I make all my own electrodes and use, practically, wire alone. I see no advantage in the knife over certain modifications of the wire. In operations in the post-nasal and pharyngeal regions, I almost always use the cautery to burn the tissues completely to the bone. The object that I have in view is to make a cicatricial tissue extending from the surface of the mucous membrane to the periosteum, so as to prevent that tumefaction which frequently occurs and fills up the nares. This tumefaction is quite remarkable sometimes and changes so readily that I have seen the anterior part of the turbinated bone swollen up, and a moment afterwards the swelling gone, so that there could not be any possible reason or justification for using the cautery from the appearance of the tissues at the moment. Yet when the patient lies down at night he finds the nose on the side on which he is lying so stuffed up that it is almost impossible to breathe. I have found that when the anterior part of the turbinated bone is burned well down to the bone that tumefaction rarely occurs afterwards. Then there is a necessity of looking after these burns, especially in the posterior regions. In the anterior aspect of the nose there is only a small amount of mucus coming over the part that is burned, and no difficulties follow cauterization; but when the burned area is situated far back the mucus flows over it and it not infrequently happens that unless the part is well attended to a certain amount of fungus growth develops in this region. I consider the after-treatment an important factor in cauterizations. I would like to say a word in regard to these adenoid growths in the posterior nares that Dr. Gradle has referred to. Dr. Trautman, of Berlin, removes all these vegetations with the sharp spoon, and claims remarkable success. I have not seen anything like relatively the same number of cases in my practice that it would seem are met in practice in Berlin. I think adenoid growths are more rare in Chicago. With reference to their removal with the galvano écraseur, I should certainly be disposed to think that the ordinary wire écraseur would be more efficient than the sharp curette, and I think it could be more easily manipulated and more of the growth taken off at the same sitting than with the galvano-cautery.

DR. W. E. CASSELBERRY, in closing the discussion, said: There are some points on which I would like to add a few words of explanation. In reference to spoiling an electrode in order to make a single loop to treat a special case, I spoiled the moxa-electrode because it was an easier way to get the loop than to send to Philadelphia and have one made. As to the merits of the loop over a knife electrode, I think that in cauterizing the soft tissue, by taking a small elongated loop and pressing it into the part you get a slough produced by each parallel wire, and it produces a larger slough with less pain than can be obtained by the knife electrode; the loop will sink further into the soft growth. If you use a plain knife

electrode the slough produced at once under the flat surface of the electrode prevents further effect from its caustic action. I have not only employed the small loop in this particular case, but have found it useful in cases of hypertrophy of the inferior turbinated body where it was unnecessary to cut off a large section by means of the knife or écraseur. By simply taking the elongated loop and pressing it against the body, a considerable slough is produced in the centre; after this has separated there remains an ulcer, and when the ulcer heals there is cicatricial tissue, which afterwards binds the body down. In regard to the multiplicity of instruments, of course the multiplying of useless instruments is to be deprecated, but I would call to mind the fact that a large portion of the advance of medical science during the last half century has been directly due to the invention of new and improved instruments and apparatus. If those who devised the microscope, the ophthalmoscope, the laryngoscope, etc., had been satisfied with the "standard instruments" already in the market, we would not now have those most important forms of apparatus. A new instrument should always receive attention, and if it is a real improvement the inventor should be given due credit. The glandular structures of the vault of the pharynx out of which adenoid vegetations are formed, and the follicles of the oro-pharynx, may not be histologically identical, but they are very similar in structure; they are both lymphoid tissues and both exhibit the same tendency to undergo the hypertrophic process and to form similar large masses which, if allowed to remain, produce morbid symptoms. I don't know that it is necessary to say anything more in regard to batteries; there are a great many in the market. I am favorably impressed with the one I use; it has never failed to work. Although it may not be detrimental to have the plates remain in the fluid, I have an uncomfortable feeling when I know that my plates are being spoiled and the fluid used up faster than they need be. The Sajous battery spoken of is an improvement on the Fleming in this respect, the pedal is not so high from the floor. When one is operating, if he raises his foot to the height of eight inches he is liable to throw himself out of balance and to lose his line of vision. The pedal of the Sajous battery is only about two or three inches from the floor and it is unnecessary to raise the heel off the floor to work it, thus maintaining the balance of the body. The Sajous plates also are corrugated, thus giving the most surface in the least bulk. But unfortunately, the Sajous battery is not in the market. The one which Dr. Sajous uses he had made to order, but I have no doubt that it will be put upon the market soon. The various methods of operating for adenoid vegetations have all the same end in view, that is, the removal of the vegetations. The sharp curette is a good method if the patient will stand the blood, increase of pain and the length of the operation. In the case of children it is, I think, a rather difficult method, and requires considerable skill and fortitude on the part of the patient. The case I have related in this connection was a girl about fourteen years old. I first tried the forceps, but the pain in cutting off the adenoid vegetations was objected to very strenuously by the patient, and I was obliged to desist. Before I tried the hot snare I tried the cold snare, but I found that it took some time to draw up the steel wire and thus squeeze off the vegetation. After the adoption of the hot snare I had no difficulty. The mere introduction of the instrument caused no pain, and after getting it over the vegetation, in two seconds the growth was off, with but little pain and no hæmorrhage to frighten the patient. The treatment of hay-fever by the cautery method, I would like to discuss, but the lateness of the hour will not permit it.

AMERICAN GYNÆCOLOGICAL SOCIETY.

The Eleventh Annual Meeting held in the Hall of the Johns Hopkins University, Baltimore, Md., September 21, 22, and 23, 1886.

Tuesday, September 21, First Day.

Morning Session.

The Society was called to order at 10 A. M., by the President, Dr. Thaddeus A. Reamy, of Cincinnati.

Dr. H. P. C. Wilson, of Baltimore, delivered *the Address of Welcome.*

Dr. H. P. C. Wilson, then read a paper on

THE DIVISION OF THE CERVIX BACKWARDS IN SOME FORMS OF ANTI-FLEXION OF THE UTERUS, WITH DYSMENORRHŒA AND STERILITY.

From want of a judicious selection of the cases, by being done by unskilled hands in proper cases, by being done in unsuitable cases and from want of appropriate after-treatment, this operation has been barren of good results in certain hands and followed by bad results in other hands. This operation has been substituted by the use of stems, sponge-tents and dilators, but I have found no measure so safe and efficient in the classes of cases to which I shall call attention, as the knife. The classes of cases in which I would recommend the operation are:

First, Those of anti-flexion of the uterus, with a hard indurated cervix, where the body is bent upon neck, or the neck upon the body, forming a more or less acute angle.

Second, Those cases of acute flexion where the cervix is hyperplastic and indurated and dense as cartilage.

Third, Those cases where there is a hard, unyielding internal os, through which the probe passes with difficulty and in its passage gives the sensation of passing over rough dense cartilage, while the finger in the sulcus between the body and the neck in front, gains the impression of a strong cord tied around the uterus. Nearly all these cases are sterile. In all of them the nabothian and utricalar glands are hypertrophied and indurated.

The method of operation was then described. With the patient under an anæsthetic, the uterus is drawn downwards by a tenaculum in the anterior lip.

The posterior lip is then divided with scissors up to the vaginal junction. An uterotome is next passed and the internal os divided anteriorly and posteriorly to an extent sufficient to permit the introduction of a large sound. The parts are allowed to bleed freely. A pledget of cotton soaked in a mixture of Monsel's solution, iodine and glycerine is then introduced into the cervix and over this, pledgets treated with Monsel's solution and water and the vagina lightly tamponed. These are not removed until the third day. All the manipulation of the uterus is avoided for at least two weeks. A sound is then carefully passed and every second day the os is gently stretched with a steel dilator. The patient is allowed to fully recover from the operation which usually requires one month. Local treatment is then suspended for one month to allow the intra-uterine mucous membrane to improve. The patient then returns and applications of Churchill's tincture of iodine are made to the endometrium two or three times a week. The treatment after the lapse of a month is again suspended to be resumed in the course of one or two months. If this after-treatment is not carefully and properly carried out, the operation had better not be done. The speaker had performed the operation four hundred times and had never obtained as good results from any other method. In no case has he had a death which could be attributed directly to the operation. There are some cases of dysmenorrhœa and sterility where this operation is entirely unsuited. It was recommended only in the cases described in the beginning of the paper. Several illustrative cases showing the good effects of the operation in overcoming dismenorrhœa and sterility were related.

DR. T. A. EMMET, of New York: Some years ago, I should have been willing to endorse all that has been said by the speaker, but since then I have had reason to change my views. Mechanical dysmenorrhœa I believe to be a myth. We must separate two conditions of flexion, one a flexure of the neck a congenital defect, and the other a flexure of the body of the uterus due to preceding inflammation outside of the uterus. Sterility resulting from this latter cause is not relieved by the operation, and its performance is attended with great risks to life. The congenital flexion is the only one in which I operate to relieve the sterility. In those cases where I have done the operation, I have not left a raw surface, but have drawn the vaginal mucous membrane to the bottom of the wound and secured it with stitches. This does away with the necessity for plugging and the fear of hæmorrhage. This operative procedure is not free from danger, I have known of at least twenty deaths from it. If all the effects of previous inflammation are removed, there is not the same danger, but I cannot see that the operation will do any good.

DR. JAMES R. CHADWICK, of Boston: I regard the flexion as always congenital, the result of the persistence of the infantile shape of the uterus. This I am convinced is not confined to the anatomy of the organ, but also involves its function. The defect probably extends to other portions of the genital tract. The only cases in which I have had any results from operation, have been where there is flexion with a small external os. In a certain proportion of these cases impregnation has followed.

DR. W. H. BAKER, of Boston: Some ten years ago I saw a number of cases in which this operation was done, and while the immediate results were very gratifying, yet in many cases the patients did not retain these good results. Of late years I have limited the operation to the class of cases in which there is a congenital malformation and those in which there has been an inflammatory condition, the results of which have been removed. The good results which Dr. Wilson reports must be explained by the great care in the after treatment which he practices.

DR. FORDYCE BARKER, of New York: Some thirty years ago, I saw Simpson perform this operation a number of times. He performed it in his office and did not seem to apprehend any danger from hæmorrhage. I employed the operation in a few cases, but I soon gave it up. The only cases in which I employ it is where the narrowing is at the os externum.

DR. J. SCOTT, of California: I have practiced the operation, but while the immediate results, have been good, I have been disappointed in the ultimate results. After the operation, the patient should be confined to bed at perfect rest, and hot water injections be employed every two hours.

DR. W. T. HOWARD, of Baltimore: My experience has not shown me that any particular operation is the one for all cases. By the antero-posterior incision I have had some excellent results. With the precautions adopted in operating in other portions of the body, incision of this kind in the majority of cases should not be dangerous. In some cases I have employed the posterior incision, in others the bilateral incision, but in the majority of cases I dilate, using antiseptic precautions and never taking less than twenty to thirty minutes to complete the operation.

DR. R. STANSBURY SUTTON, of Pittsburgh, read a paper describing

ANOTHER MODIFICATION OF EMMET'S CERVIX OPERATION, WITH A CASE IN POINT.

A case of old standing neglected double laceration of the cervix was reported. The cervix was composed of dense, hard, hyperplastic tissue almost cartilaginous in character. An operation by the ordinary method was out of the question, for the sutures would not have held. In order to remove the greatest amount of cicatricial tissue and overcome the condition, the following procedure was resorted to: The lower lip of the laceration was denuded of its altered mucous membrane, leaving only a narrow strip corresponding to one-half of the strip usually left to serve for the future os. The upper lip was treated in the same way leaving the opposite half of the strip of mucous membrane. When the flaps were brought together, the strips of mucous membrane lay side by side. In this way, union in the position of the future canal was prevented. Good union followed the operation and at the end of three weeks a Simpson sound was passed without difficulty. This

operation may be of service in certain cases where the usual operation can not be performed.

Dr. T. A. Emmet: The modification seems to be an ingenious one, but its value can only be determined by future trial. In such cases, however, where there has been such cystic degeneration it is often better surgery to amputate a portion of the cervix, so as to get into healthier tissue. In a certain number of cases, I have always performed amputation, I have always objected to amputation of the cervix in so-called elongated cervix.

Dr. George J. Engelmann, of St. Louis: I have paid very little attention to the strip of mucous membrane. I have in such cases as has been described by Dr. Sutton, cut away nearly all the mucous membrane and insert a short piece of fine catgut. This keeps all the opening which is necessary.

Dr. W. H. Baker, of Boston: I think that if we can restore the healthy character of the strip of mucous membrane and retain it, that is the best surgery. In this class of cases I have been in the habit of removing a transverse wedge-shaped portion of each lip of the cervix and then bring the parts together. In this way the hyperplastic tissue preventing the apposition of the surfaces is removed.

Dr. Elwood Wilson, of Philadelphia, presented a paper read by the Secretary:

NOTES ON THE TREATMENT OF RECENT LACERATION OF THE CERVIX UTERI.

Occasionally a tear of the cervix can be recognized immediately after labor, but sometimes this can not be done. The patient should always be examined ten or twelve days later. If laceration be found immediately after labor, injections of corrosive sublimate solution, one to five thousand with the insertion of an iodoform suppository should be resorted to. The vagina should be irrigated every other day and the suppository renewed. When the laceration is found within three weeks after delivery, the following treatment should be employed: After the surface has been carefully cleansed and dried, it should be painted with a solution of nitrate of silver one drachm to the ounce of distilled water. From three to five applications at intervals of five days are usually required. In every case in which the author had tried this measure (six in number) the result was entirely satisfactory.

Dr. Fordyce Barker: It seems to me that the practice recommended in the paper is better worthy of trial. It is much preferable to the rule laid down within the past few years, that if there is a laceration it should be closed immediately after labor. If this method will effect union it should be tried.

Dr. T. A. Emmet: I suppose that a certain amount of laceration occurs in every labor, but it is wonderful what nature will do to restore the cervix where septic poisoning is not present. It seems to me that in all cases, where under favorable circumstances, nature has failed to repair the damage, there have been symptoms indicating septic inflammation. In the cases reported I believe that the same results would have been obtained even if nitrate of silver had not been employed.

Dr. J. Scott, of San Francisco: In only one case have I attempted to sew up the cervix shortly after labor. In this case there was an extensive tear of the cervix and of the peritoneum. There was considerable bleeding, and five hours after labor I thought it advisable to sew up the cervix. The tissues were so soft that it was with the greatest difficulty that I could get the sutures to hold. Union took place, however, both in the cervix and in the peritoneum.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Outbreak of Scarlatina at Marylebone—Restoration of the Color of Hair by Phosphorized Cod-liver Oil.

Some time ago attention was called to the circumstances which attended a remarkable outbreak of scarlet fever in the Marylebone district of London. The mystery surrounding the epidemic in question was of a profound nature. The ordinary sources of infection were proved to be inoperative. The presence of scarlet fever in the occupants of dairies from which the milk of the infected families was derived was shown to be a theory utterly unsupported by facts. There was in short no signs or trace of infection in so far as regarded the milk supply or its human environments. Yet, that the disease had spread from milk, and in particular from the milk drawn from one farm at Hendon, seemed to be a hypothesis suggested and supported by the facts of the case. Accordingly Mr. W. H. Power, of the Local Government Board, undertook the task of further investigation. As the result of a very full enquiry this gentleman was able to localize a disease which had appeared in certain cows imported into the dairy farm at Hendon, as the probable cause of the scarlet fever infection. By a process of elimination of all unlikely and unsupported evidences, the cows themselves were thus fixed upon as the defaulters in the matter of healthy conditions. It has long been suspected that milk under certain circumstances could give rise to scarlet fever in man. This was a theory of sanitarians, but it lacked proof and demonstration. Mr. Power's inquiry had traced the scarlet fever epidemic of Marylebone to certain affected cows at Hendon, but as formerly remarked, decisive proof was needed to prove that the disease of the animals could really produce scarlatina in man. That proof has now been supplied. It is therefore no longer a matter of speculation, but one of plain proof, that milk taken from cows affected with a particular disease is capable, when impregnated with the germs of the ailment in question, of giving rise to ordinary scarlet fever in human beings. This is a step gained in health science. It is true that this is by no means the first or only occasion on which an animal disease has been proved capable of originating a corresponding ailment in man.

The task of tracing out the exact nature of the disease in the Hendon cows was entrusted to Dr. Klein, whose labors as an investigator in this difficult branch of pathology are well-known and appreciated by the world of science at large. Two of the affected cows at Hendon were purchased by the Local Government Board, and were conveyed to the useful scientific depot, the Brown Institution. The disease Dr. Klein tells us in the Report which has been issued by the Board, made its appearance on the teats and udders of the cows. These sores were, however, only the localized manifestations of the constitutional trouble. The hair was also noted to be liable to come off in patches on the back and tail particularly. That the ailment did not appear to have affected the health of the animals in any severe or marked degree was proved by the facts that their feeding was not impaired in any way, while their temperature was normal. Post-mortem examination of the cows revealed prominent affections of the lungs and kidneys especially, while the liver tissue is described by Dr. Klein as being much softened. It was clear therefore that the disease, whatever its nature, had not left the system of the animals untouched. The crucial point of the inquiry, however, had reference to the nature of the local sores already mentioned as occurring on the teats and udders. It is from such manifestations that the true character of a disease can often be best determined. Dr. Klein inoculated four calves with matter taken from the ulcers of the cows. In each case a similar sore was produced, this fact proving the transmissibility of the disease, in one fashion at least, from cow to cow. Similar inoculations, made on guinea pigs and dogs resulted in the discovery that the former animals are insusceptible to the action of the poison or disease matter. In one of the three dogs inoculated a successful result was obtained.

The germs found in the matter from the ulcers, Dr. Klein describes as closely resembling the germs that are familiar as occurring in the well-known "foot and mouth disease" of cattle. Cultivating the germs in various solutions adapted to imitate the fluids of the cow's body in which they found apparently a natural habitat, Dr. Klein was able to study their development, and was also placed in a position to make experiments with the view of further testing if the germs in question were veritable sources of the disease. Using a cultivation of the germs he inoculated therewith two calves. In twenty-six days one of these calves was found dead. Examination of the animals body proved that it had perished from a very distinct form of disease. Dr. Klein tells us that this disease, artificially produced in the calf by inoculation with the germs derived from the cow "bears a close resemblance to human scarlatina." He specially quotes the appearances found in the kidney of the animal as indicative of scarlet fever attack. The symptoms produced in the calf, when compared with those found in man after scarlatina are, in Dr. Klein's ideas, absolutely identical. There is little need to enter at greater length into the history of these investigations, which have been satisfactorly brought to a point, leaving no doubt whatever that cow disease of a special kind is capable of giving scarlet fever to human beings. It remains, however, to remark that the milk of the affected cows has been proved to be pure and harmless enough. It does not contain the germs of the disease. Hence, a question arises regarding the manner in which infection becomes possible. There can be no doubt that the milk becomes contaminated after it has passed from the udder of the cow. Dr. Klein says that the fingers of the milker must of necessity bring down into the milk disease particles from the ulcerations on the teats of the animal. In the milk these germs find a good medium in which to multiply. If the nature of the infection becomes thus plain, the duty of the dairyman, under these new revelations of science, becomes no less clearly defined. His business more than ever will demand strict attention being paid to the health of the cows under his charge. Armed with the knowledge of Dr. Klein's discoveries, it should be an easy matter for the veterinary inspector of the dairy to isolate at once from the vicinity of healthy cows all animals presenting the diseased appearances described. While it will be incumbent on the dairy man to see that the milk of such animals is not allowed in any way to be used for human or indeed animal consumption.

A case was shown recently in a patient who, whilst under the internal administration of phosphorized cod-liver oil, his hair, which was prematurely grey, returned to its original color. G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Charities and Correction—Entertainment for the Insane—Bartley Campbell—Industrial Education Association.

The Commissioners of Charities and Correction are contemplating some important changes in the accommodation of the city's criminals, paupers, sick, idiotic and insane, of which they have charge. The penitentiary on Blackwell's Island, having for a long time been overcrowded, instead of enlarging the buildings there, it has been decided to erect an entirely new structure elsewhere, and two years ago, under a a special act of the Legislature, empowering them to make the purchase, the Commissioners bought Riker's Island for the purpose. They propose to have there an enormous model penitentiary, ample in size to serve for many years to come, and have now practically secured from the Board of Estimate and Apportionment the sum of $100,000 with which to commence the work. There was some legal obstruction to this appropriation, but this is believed to have been removed by a recent decision of the Court of Appeals.

In order to relieve the overcrowded asylums under their charge, the Commissioners last year purchased a thousand acres of land near Central Islip, on Long Island. The present population of these institutions is reported as follows: Men in city insane asylum,

Ward's Island, 1,944; women in asylum on Blackwell's Island, 1,879; women in branch asylum, Ward's Island, 614; women in homœpathic hospital (insane), 150; epileptics and idiots in institutions on Randall's Island, 650; total, 5,237. It is prepared to inaugurate, under the direction of Dr. A. E. MacDonald, general superintendent of the city asylums for the insane, the cottage system, which has been so successfully carried out in Germany and Switzerland, on this tract on Long Island, which is conveniently situated on the railroad and is said to be admirably adapted for farming purposes. Many attractions and home-like cottages will be erected there, in which will reside small families of the non-violent insane, both men and women, and it is believed that with the labor of the able-bodied among them they will at once care for themselves at a lower rate of current expenditure than under the present system, which, by means of the various favorable influences thus brought to bear upon them (which will be so different from those of the ordinary lunatic asylum), the percentage of recoveries will be largely increased. For a considerable time, between six and seven hundred insane men have been employed in useful labor, principally in farm and garden work, on Ward's Island, while many of the insane women on Blackwell's Island are constantly occupied in womanly work there; and the results from the plan have been very satisfactory.

By the removal of the penitentiary to Riker's Island, Blackwell's Island will be left exclusively devoted to the relief of the suffering poor. As long as it remains there, the hospitals and asylums will, to a certain extent, continue to be associated in the popular mind with the penal institution. As has been said, the shadow of the penitentiary rests upon all the noble works of charity on Blackwell's Island, and by its association with crime in an official way, a new disgrace is imposed upon helpless poverty, and soon a stigma cast upon the victims of physical suffering and mental alienation. Among the other recent improvements on Blackwell's Island is the abandonment of the hospitals for small-pox and other contagious diseases there. Patients suffering from these afflictions have now been transported from the care of the Commissioners of Charity and Correction to that of the Health Department, and about six months ago the new hospital for infectious diseases was opened on North Brother's Island, under the auspices of the latter, which also has charge of the new reception hospital at the foot of East 16th street.

The former small-pox hospital building, thus left vacant, is charmingly situated on the extreme southern point of Blackwell's Island, and as it is substantially built of stone and architecturally one of the handsomest structures among the city institutions, it was decided not to destroy it, but to fit it up for the residence of the corps of trained nurses engaged in the care of the sick in the neighboring great Charity Hospital. As a preliminary to this conversion, everything but the stone walls was torn out and burned—trams, flooring, wainscoting, rafters and roof—and the interior was completely reconstructed, so as to adapt it in the most perfect manner possible to its new uses. The fifty young women of the Charity Hospital training school have just taken possession of their palatial quarters, and it is altogether probable that no set of hospital nurses has ever before been so luxuriously housed. On the ground floor a spacious corridor runs through the building (which is eighty feet long), from end to end, with a connecting hall as long as the width of the building (forty feet), and on either side the large parlors and reception rooms, are the office and apartments of the lady superintendent. The floors above are devoted to the sleeping rooms of the nurses, which are large, lofty and admirably lighted and ventilated, and it is needless to say that the young women are highly delighted with their new quarters. Among the other attractions of the place is a beautiful bathing beach just at the doors.

In Bellevue Hospital, one great trouble with the old and badly constructed buildings of which has always been the difficulty of receiving an adequate supply of fresh air, the Commissioners have decided to introduce a new system of ventilation, the working-power of which is applied by an electric motor; and it is claimed that by it the air in a ward will be entirely changed every thirty minutes, and may be in each fifteen minutes if it is required that the temperature should be maintained, absolutely without fluctuation, at any desired point. The working of the fans in the tubes at the top of the buildings will be entirely automatic, and the electric motor will not require attention more than once a month.

Dr. MacDonald and his assistants have recently introduced at the Female Insane Asylum on Blackwell's Island a form of entertainment which it is thought will prove highly beneficial. Instead of having the patients entertained by musical or dramatic performers by parties from outside, as has been commonly the custom, the idea is to have the patients give the whole performance themselves, and the first of these took place on the 22d of September. The programme was made up of vocal and instrumental music, recitations and dramatic and negro minstrel sketches, and was most keenly enjoyed both by the audience and those who took part in it. The costuming is said to have been very amusing, and a part of the wardrobe was supplied from that of a disbanded theatrical company, which Commissioner Brennan, who always has a large heart for the unfortunates under the care of the Department, recently purchased for the patients. These entertainments will be repeated as often as practicable, as the physicians find their effect exhilarating and healthful.

The wife of poor Bartley Campbell, the playwright (who has been for some months an inmate of the Bloomingdale Asylum), having applied for the appointment of a committee of his estate and person, Judge Andrews, of the Supreme Court, has granted a writ *de lunatico inquirendo*. In his testimony concerning the condition of the patient, Dr. Charles H. Nichols, one of the physicians of the asylum, states that he continues to show the characteristic indications of progressive paralysis of the insane. In his hallucinations he imagines that he frequently holds communications with Shakespeare, Wagner, Queen Victoria, King Humbert, of Italy, President Grévy, and other notable personages, living and dead,

whom he is supposed to meet in heaven. At other times he fancies that many persons are pursuing him for the purpose of taking his life, and that among them are his two sons, from whom he especially beseeches to be protected; while sometimes, again, his delusion is that certain persons, one of whom is Oliver Cromwell, are engaged in combat with each other within his body.

The large and commodious building on University Place, formerly occupied by the Union Theological Seminary, has been secured for that excellent institution, the Industrial Education Association, which, since the exhibition of children's handiwork last spring, has greatly extended its work and has been placed upon a permanent basis. During the last summer the experiment of opening vacation schools has had a good effect in showing the advantages of seeking to establish in children the habit of cheerful industry, and a number of classes of boys and girls have been profitably trained on Long Island, Staten Island and other localities. In its new quarters the Association will enjoy extended facilities for carrying out its work. The former chapel has been converted into a lecture hall, and the library will be used as a permanent exhibition for juvenile industries. Many useful and ornamental kinds of handicraft will be practically taught, and the courses of instruction also include a Kindergarten and a training school for female servants. P. B. P.

MISCELLANEOUS.

THE PASTEUR INSTITUTE.—The municipal council of Paris has ceded to the Pasteur Institute, the ground on which it is built. The official statement just made by the directors of the institute shows: The whole number of persons treated by Pasteur is 1,656 (of these, 15 have died); 1,009 of these were French (3 of them died); 182, including 50 bitten by rabid wolves, were Russians (3 of these bitten by dogs, and 8 by wolves, have died); 20 were from Roumania, with one death; of the others, 59 were from England, 17 from Austria, 74 from Algeria, 18 from America, 2 from Brazil, 42 from Belgium, 58 from Spain, 7 from Greece, 8 from Holland, 25 from Hungary, 105 from Italy, 20 from Portugal, 2 from Turkey, and 2 from Switzerland. Of these not one has as yet died.

THE DETECTION OF MORPHINE TAKING.—PROFESSOR BULL, of Paris, says that the morphine-taker may be detected by examination of the skin or the urine. The skin will be covered, usually on the thighs, with little dark spots which are situated in the centre of small indurations; these are made by the hypodermatic needle. If the patient refuse an examination, the urine may be examined. By adding a few drops of tincture of iron to the urine, a blue tinge will be presented if morphine be present.

DEATH OF MR. SAMPSON GAMGEE.—We regret to have to announce the death of Mr. Gamgee, which took place on September 18.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM SEPTEMBER 25, 1886, TO OCTOBER 1, 1886.

Major Dallas Bache, Surgeon, granted leave of absence for 25 days, to take effect on or about Oct. 2, 1886. (S. O. 143, Div. of the Atlantic, Sept. 24, 1886.)

Capt. Daniel M. Appel, Asst. Surg., assigned to duty at Fort Davis, Texas. (S. O. 133, Dept. Texas, Sept. 22, 1886.)

First Lieut. Philip G. Wales, Asst. Surg., leave of absence extended to include Nov. 5, 1886. (S. O. 226, A. G. O., Sept. 29, 1886.)

First Lieut. Charles M. Gandy, Asst. Surg., assigned to duty at Fort Concho, Texas. (S. O. 131, Dept. Texas, Sept. Sept. 18, 1886.)

First Lieut. Chas. F. Mason, Asst. Surg., ordered for temporary duty at Fort Verde, Arizona Ter. (S. O. 90, Dept. Arizona, Sept. 20, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE TWO WEEKS ENDING OCTOBER 2, 1886.

P. A. Surgeon D. M. Guiteras, to Rec'g Ship "Franklin," for temporary duty, Oct. 3d.

Asst. Surg. A. R. Wentworth, detached from Navy Yard, League Island, and to the U. S. S. "Galena," Oct. 1st.

Asst. Surg. H. B. Scott, ordered to Navy Yard, New York, Oct. 1st.

P. A. Surgeon Richard Ashbridge, detached from the U. S. S. "Swatara," Oct. 1st, granted six months leave.

Asst. Surg. T. A. Berryhill, detached from the Museum of Hygiene and ordered to Rec'g Ship "Minnesota."

P. A. Surg. Geo. Arthur, detached from the Navy Yard, New York, and ordered to the Museum of Hygiene.

P. A. Surg. H. T. Percy, detached from the U. S. S. "Galena," proceed home and await orders.

Asst. Surg. Joseph Shafer, detached from the U. S. S. "Minnesota," and ordered to the U. S. S. "Swatara."

P. A. Surg. J. M. Steele, detached from Naval Academy, and granted six months leave.

P. A. Surg. Clement Biddle, ordered to Naval Academy, Annapolis, Md.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED OCTOBER 2, 1886.

Bailhache, P. H., Surgeon, granted leave of absence for thirty days, Sept, 25, 1886.

Vansant, John, Surgeon, granted leave of absence for thirty days, Sept. 24, 1886.

Bratton, W. D., Asst. Surgeon, relieved from duty on Revenue Steamer "Corwin," ordered to duty at Marine Hospital, San Francisco, Cal., Sept. 20, 1886.

Purviance, Geo., Surgeon, granted leave of absence for twenty-five days, Sept. 30, 1886.

Stoner, G. W., Surgeon, granted leave of absence for twenty-three days, Oct. 1, 1886.

Carter, H. R., Passed Asst. Surg., to proceed to Galveston, Texas, as Inspector, Sept. 30, 1886.

Ames, R. P. M., Passed Asst. Surg., granted leave of absence for thirty days, to take effect when relieved, Sept. 30, 1886.

Wasdin, Eugene, Asst. Surg., ordered to examination for promotion, Sept. 30, 1886.

Brooks, S. D., Asst. Surg., granted leave of absence for thirty days, to take effect when relieved, Sept. 30, 1886.

Williams, L. L., Asst. Surg., relieved from duty at Mobile, Ala., ordered to Marine Hospital at Wilmington, N. Carolina, Sept. 27, 1886.

Perry, T. B., Asst. Surgeon, relieved from duty at San Francisco, Cal., ordered to Marine Hospital, St. Louis, Mo., Oct. 1, 1886.

CORRIGENDUM.

On page 240 of THE JOURNAL of August 28, in the Editorial on "Pasteur's Anti-Rabic Inoculations," in the 21st line from the top of the first column, for the word "room" read *wound*

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, OCTOBER 16, 1886. No. 16.

ORIGINAL ARTICLES.

FIBRO- OR SPINDLE-CELLED SARCOMATOUS TUMORS, WITH THE REPORT OF A CASE AND PRESENTATION OF THE SPECIMEN.[1]

BY B. A. WATSON, A.M., M.D.,

SURGEON TO CHARITY, ST. FRANCIS, AND CHRIST HOSPITALS, JERSEY CITY, N. J.

Various names have been employed by modern authors to designate these tumors, and such appellations are commonly expressive of their structural composition or pathological peculiarities. We accordingly find Mr. Paget speaking of them as "recurrent fibroids;" Lebert, as "fibro-plastic tumors;" Müller, "fasciculated carcinoma;" Gluge, "albuminous sarcoma;" Cornil and Ranvier, "fasciculated sarcoma;" Follin, "plasmona;" Bennett, "fibro-nucleated tumors;" Lancereaux, "spindle-celled sarcomatous tumors;" while the same morbid condition is discussed by Billroth under the head of "spindle-celled sarcoma or fibro-sarcoma." These tumors vary greatly in size and may not be larger than a filbert in one instance, while, in other cases, the dimensions occasionally exceed those of the adult human head.

These neoplasms were first described by Lebert under the name of "fibro-plastic tumors." They are very common and may be developed in various regions of the body. They are most frequently found in the skin and subcutaneous structures, but likewise frequently occur in the deep seated connective tissue, aponeuroses, mammary gland, testicles, and also, occasionally, in the muscular tissue. The disease may also originate in the periosteum and by some authors it is thought possible for it to find a starting point even in the endosteum of the long bones. These tumors are never uniform in their external appearance, inasmuch as the form of the growth is commonly dependent on the surrounding tissues, and it is a well known fact that development will go on most rapidly in the direction in which it meets the least resistance. These growths are generally rounded or lobulated and firmly attached to the surrounding tissues, and even a casual examination after their removal, shows them to be firm, tough, and irregular. A transverse section of the tumor having been made, brings into view a pale red, pale pink, or clear grayish-white tissue, and the surface has a streaked appearance as if from the presence of fibrous bands and bundles of fibrous tissue variously arranged, sometimes straight, sometimes curved, at other times parallel or even crossing each other, and occasionally found in concentric layers, similar to that which is observed on the section of uterine myoma. There is not seen, on the freshly cut surface of these tumors, any juice, or at least only a very small quantity of a transparent fluid, but in those tumors which have been left exposed to the air after their removal, until decomposition has set in, it will be observed that if incisions are now made in them, there soon appears on the cut surfaces a whitish, milk-colored fluid, which, however, is less in quantity than that commonly exuded under the same circumstances when some of the other varieties of sarcoma are incised during the stage of decomposition.

The cell formation of the spindle-celled sarcoma is copied very accurately after the spindle-celled tissue of recent cicatrices, as the microscopical examination of these tumors shows that they are made up of a short and narrow spindle-cell with an elongated, roundish nucleus, with or without nucleoli, enlarged in the middle and terminated in two fine points; it is also this peculiar form which has caused them to be compared with the spindle; this peculiarity supplying the explanation why the name of spindle-cell has been given to these elements and the name, spindle-celled sarcoma applied to these morbid growths. The spindle-cells vary greatly in size, and this fact has caused Rindfleisch to designate the spindle-celled sarcomatous growths as the "small spindle-celled sarcoma," and the "large spindle-celled sarcoma." This distinction possesses but little value since all the intermediate sizes are found in our pathological examinations; nevertheless, it may be well to remember that the small spindle-cells characterize a tumor which is more dangerous to life—more prone to return when it has been removed. It therefore seems that the large spindle-cells represent a more favorable condition of the elements—the prognosis is less grave, and consequently from the clinical stand-point, it is not a matter of entire indifference whether the cells are large or small. Besides these spindle-cells, there is frequently found a certain number of round cells, similar to those observed in cases of encephaloid sarcoma. The latter are sometimes very limited in number, whilst, on the contrary, they may be very numerous. In these instances the surgeon is dealing with a mixed form of sarcoma, intermediate between the encephaloid and the spindle-celled.

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

The arrangement of the fibrous bundles in the spindle-celled sarcoma is very simple, the fusiform cells being placed side by side in such a manner that the enlarged portion of one cell is in contact with the slender part of its neighbor, and these are firmly united by an intercellular substance. The uniting, or intercellular substance is hyaline, more firm and less abundant than in cases of encephaloid sarcoma. The vessels in these tumors possess few peculiarities; the larger are observed running in the same direction as the large fasciculæ, but the smaller do not conform to this rule. The tissue of the spindle-celled sarcoma is more dense than that of the encephaloid, and consequently interstitial hæmorrhage is more rare. In the encephaloid variety it has been observed that fatty granular changes, mucous transformation, etc., are frequent occurrences which are not seen in cases of the spindle-celled sarcoma.

It is highly important that sarcoma should be carefully studied in connection with the tumors of the female breast, and although these sarcomatous growths may be either encephaloid or spindle-celled, it is, nevertheless, highly important, from both a diagnostic and prognostic standpoint, that the surgeon should be able to make a differential diagnosis of sarcoma and carcinoma of the breast. This difference consists of well marked pathological characteristics, which I shall attempt to portray in the following diagram.

DIFFERENTIAL DIAGNOSIS OF SARCOMA AND CARCINOMA OF THE BREAST.

SARCOMA.	CARCINOMA.
1. Commonly develops very slowly, especially at first; may remain stationary for years.	1. Commonly develops very rapidly and may terminate fatally within a year.
2. Rough, lobulated, or lumpy; lump may be as large as a hen's egg; tumor finally attaining great size and becoming pediculated.	2. Slightly roughened; no large lobules; tumor usually small and flattened on the chest.
3. Skin involved after a long interval; morbid growth approaches the integument, which is gradually thinned as by an abscess, and also frequently marked with large veins.	3. Skin becomes quickly attached to the morbid growth, is retracted, drawn in, thus giving rise to the appearance of a quilted cover; large veins not seen, but in their stead there may be observed white lines, sometimes called lymphatic varices.
4. Nipple does not retract and is not often changed in appearance.	4. Nipple retracts and its end seems to be absorbed.
5. Ulceration occurs after the lapse of a long period; skin gives way, owing to pressure on its internal surface by the lumps which belong to the morbid growth, but the ulcerated border of the integument is thin, loose and not adherent to the tumor.	5. Ulceration occurs at an early date; skin is invaded by the morbid growth, and destroyed; border is thickened, hardened and adherent to the tumor.
6. Consistence of the tumor varies in the different stages of the disease; first hard, later soft spots may be found, and even liquid parts from the cysts within it.	6. Consistence of the tumor never varies in the different stages. Generally firm.
7. The mammary gland remains distinct from the tumor; consequently it is not destroyed, but simply flattened and atrophied.	7. This morbid growth, from the first, fuses with the mammary gland and soon destroys it.
8. Sarcoma does not become adherent to the deep-seated parts.	8. Carcinoma adheres quickly to the deep-seated parts, especially the pectoralis muscle.
9. Does not involve the lymphatic system in the early stage of the disease, and rarely, even in the late.	9. Involves the lymphatic system in the early stage of the disease, which is always steadily progressive.
10. The morbid growth returns in the majority of cases, commonly in the same organ, and these relapses indicate a finally fatal termination of the disease.	10. The morbid growth will surely and speedily return; usually in some other part of the body and a fatal termination rapidly supervenes.
11. The general health of the patient often remains quite satisfactory, even after the tumor has been removed several times.	11. The general health is quickly impaired, the cachexia becoming very marked in the early stage of the disease.
12. The progress of the disease is rarely attended with much pain.	12. The progress of the disease is attended with severe pain.

Having pointed out the most essential differences between sarcoma and carcinoma of the breast, I shall now consider briefly, the chief characteristics of the former disease in this organ. It should, however, be remembered that while speaking of the morbid growths in the mammary gland, I do not confine myself to the spindle-celled sarcoma, but also include all the varieties of sarcomatous growths found in this organ. I have taken this liberty in order that I might be enabled to draw a dividing line between sarcoma and carcinoma.

The sarcomatous growths found in the breast were designated by Rindfleisch by the following names: cysto-sarcoma fibrosum, cysto-sarcoma mucosum, sarcoma peri-canaliculare, sarcoma peri canaliculare diffusum. The sarcoma which is developed in the mammary gland is accompanied by a proliferation of cells of the lactiferous ducts. Cornil and Ranvier, who have studied very carefully these morbid growths have designated two forms, one in which the sarcomatious tissue is developed in the lobules at those points where the lactiferous ducts are the most numerously distributed, or, as is thought by some, within these minute canals.

In the other form of this disease, the granulating sarcomatous tissue which is supposed to originate within the lactiferous canals, pushes back their walls, extends into them in the form of simple papillæ, which distend these tubes and frequently become attached to them by a narrow pedicle. This growth is distinguished from the former by a more rapid development of the tumor and also by a more luxuriant proliferation of the foliated and papillar excrescences into the lactiferous ducts.

This condition becomes more marked when, besides the distention and distortion of the lactiferous ducts, there is also a collection of mucoid secretion within them, which gives rise to irregular sacs in which fluctuation may be detected, These sacs are the lacunary cysts which are so frequently mentioned by the various authors in their writings on sarcomatous tumors of the breast. Billroth has described this variety under the name of adenoid sarcoma, and many other authors have classified it with adenoid tumors, thus accounting for the fact that many morbid growths, so-called adenoids, have returned after their removal by operation.

The symptoms of the spindle-celled sarcoma differ somewhat from those which have been described in the above. This morbid growth, when it makes its appearance in the breast, is commonly indicated by roundish nodules, which have their origin in the connective tissue surrounding the lactiferous ducts.

The pathological and microscopical appearances of the spindle celled sarcoma of the breast is very similar to those presented by the same morbid growth in other parts of the body. Rindfleisch's[1] sarcoma peri-canaliculare diffusum is "an entirely uniform, yet mostly spindle-celled sarcomatous mass, within which the lactiferous ducts are distorted and distended into widely gaping clefts. This tumor also begins in the surroundings of the ducts, thence, however, passes over the entire interstitial tissues." The spindle-celled sarcoma of the skin, where this neoplasm is common, frequently shows itself in the form of a small tumor, a mere excrescence, which soon involves the entire thickness of the integument, and its breadth may exceed its thickness. This growth sometimes ulcerates at an early day, presenting a raw surface, covered with granulations which readily bleed, and soon become covered with a scab which falls off and is renewed from time to time. There is a form of spindle-celled sarcoma which takes its origin in the connective tissue beneath the skin, possessing many of the characteristics of the encephaloid sarcoma, although its consistence is more decidedly firm, occasionally even hard, where one observes fewer blue veins zig-zagging under the skin on the surface of the tumor and about its periphery. The skin, in some of these cases, remains a long time intact, when the disease is primary in its character, much longer than in cases of encephaloid sarcoma. The tumor, likewise, possesses a marked degree of mobility, but should this morbid growth happen to be attached to the aponeurosis it will then become almost immovable. Therefore, when a spindle-celled sarcoma originates in the periosteum it is naturally immovable. In these cases there is felt a mass which seems to be incorporated with the bone, even though only a lateral projection from it, while in other cases it envelops the whole surface of the bone like a cushion.

These tumors are commonly attended with little or no pain. They also develop very slowly, in fact their action is more torpid than that of the spindle-celled sarcoma of the soft parts. It is likewise thought that this tumor, when it has its origin in the periosteum is much more fatal than when it is confined to the soft tissues, a result which may, *in some measure be due* to the fact that owing to the severe character of the operation required to remove the morbid growth it is commonly postponed so long as to fail in accomplishing the object sought. The constitutional infection in the case of any spindle-celled sarcoma unquestionably takes place through the circulatory system, the blood carrying with it the contaminating juices of the tumor while the lymphatic vessels take but little or no part in this morbid process. It therefore follows that there is seldom found an enlargement of the lymphatic glands during any stage of its progress.

The spindle-celled sarcoma destroys life by a contamination of the general system, or by its pressure on important organs. When a spindle-celled tumor is removed, it may without doubt be reproduced, in fact this is the usual course which this disease takes; but in some patients the health remains good in spite of a multiplicity of relapses. Birkett has cited a case in which sixteen operations were performed within nine years, and where the general health remained unimpaired. A fact worthy of mention, but one that is also observed in other kinds of tumors, is the unfavorable action arising from a traumatism involving morbid growths, in which it is not unfrequently the case that an essentially harmless and chronic disease may take on a very rapid and unfavorable action in consequence of a severe blow or concussion. In connection with this statement it is not difficult to comprehend the effect produced by incomplete operations on various tumors, which, by these operations, are caused to take on a high state of activity, frequently with a fatal result; thus a harmless fibro-polypoid growth situated in the naso-pharyngeal cavity, frequently becomes sarcomatous following an incomplete operation for the removal of the primary tumor.

When the spindle-celled sarcoma is reproduced after its removal the secondary tumor may consist of essentially the same texture as the primitive; but there is a marked tendency in these growths to become more and more embryonic in their nature, thus precipitating the progress of the malady. The practical lesson taught by these observations is the avoidance of incomplete operation.

The ganglionic engorgement, which is rarely observed in cases of spindle-celled sarcoma, is merely irritative, and consequently entirely disappears after the removal of the morbid growth. The absence of this ganglionic engorgement is a peculiar characteristic and constitutes a marked difference between the encephaloid and spindle-celled sarcoma, ganglionic infection being rather common in the former, but exceptional in the latter.

It must be confessed that our knowledge of the etiology of the spindle-celled sarcoma is very limited and unsatisfactory. If we can believe statistics, the spindle-celled sarcoma of the soft parts is much more common among women than among men, the proportion being about two to one; but the order of frequency of occurrence in the sexes is reversed when this disease attacks the long bones. This disease occurs in all classes and at all ages, but most frequently in the middle period of life. It is very rare in children; nevertheless a case has been reported by Schwartz in which the disease attacked the tibia in a young infant. There are also reported cases of well-marked spindle-celled sarcoma of the skin which were discovered at birth, and it is also believed that the existence of excrescences or slight defects in the integument present weak points which predispose to this degeneration. In addition to these etiological conditions, there should be mentioned the effects of repeated or continuous irritations, bruises, or contusions which have a definite action in the origin and development of sarcomatous growths, especially the spindle-celled sarcoma. There are in-

[1] A Text-book of Pathological Histology, p. 595, Trans. Phila., 1872.

numerable cases cited in support of the views expressed in the preceding sentence, and it is impossible to deny their importance. It has likewise been clearly shown, that, if a sarcoma which already exists, be subjected to a traumatism, this action may become the cause of much greater activity in the morbid process. Inflammation, suppuration, and other unfortunate complications may now arise in rapid succession, hastening the disease to a fatal termination.

The diagnosis of spindle-celled sarcoma cannot be based on any pathognomonic signs. It is by carefully weighing the symptoms as a whole that we are able to diagnosticate the malady. Even a very careful examination of all the symptoms, in many cases, does little more than supply a serious presumption in favor of its nature, without enabling the surgeon to say positively that the tumor before him is a true spindle-celled sarcoma. Thus when this tumor it developed within an aponeurosis *e. g.*, in the fascia lata or some other fibrous tissue, it is rendered immovable, a fact which, when considered in connection with our knowledge of the nature of this neoplasm establishes a presumption in favor of its character. The same, or even greater difficulty, may be experienced in establishing a correct diagnosis in cases of spindle-celled sarcoma when it takes its origin from the periosteum, where it may be readily mistaken for an exostosis, whilst in other localities the question of an enchondroma may lead to a similar difficulty. In certain organs, the breast for example, the spindle-celled sarcoma may be mistaken for a scirrhus, carcinoma, or even an encephaloid cancer. However, it should be remembered that the spindle-celled sarcoma develops more slowly, that it maintains a more independent existence, does not attach itself so firmly to the surrounding tissues, the skin which covers the morbid growth remains a long time intact; finally, enlargement of the glands in the axilla never takes place in the early stage of the disease, and very rarely even in the late. A small sarcoma in the skin may be readily mistaken for an epithelioma, but, if the subject is young, the age of the subject should be regarded as presumptive evidence in favor of the sarcomatous nature of the growth. It would seem that there should be very little trouble experienced by a surgeon in diagnosticating a secondary sarcomatous growth appearing in a cicatrix following the removal of the primary disease; but even this may at times be very embarrassing. It is well known that a cicatrix may become reddened and thickened at various points, showing hard excrescences which are properly designated as cicatricial keloids, and that these are commonly regarded as inflammatory products. This peculiar growth frequently marks the former site of every suture employed in the treatment of the wound, or more accurately stated, these keloids form on every suture cicatrix. It may therefore become difficult, in some rare cases, to decide whether the morbid development appearing on a cicatrix is really a sarcomatous growth or not, but the surgeon need not long remain in doubt in these cases. The spindle-celled sarcoma will continue to grow steadily, but the keloid will soon come to a perfect halt and finally shrink and shrivel up.

The prognosis of spindle-celled sarcoma, is without doubt, very grave. Abandoned to itself it advances steadily, and ultimately leads to a fatal termination, either by the general contamination of the system, or local organic disturbance of important vital functions. Furthermore, the fact should not be lost sight of that the spindle-celled sarcoma soon returns after its removal, that it may ultimately become constitutional, and likewise multiply in various organs of the body; notwithstanding all this, the prognosis is much less grave than in cases of carcinoma, or even of encephaloid sarcoma, its progress being slower and the surrounding tissues much less rapidly involved.

It is undeniable that the well-being of the patient is served by an early operation. A considerable number of patients on whom operations have been done under favorable circumstances have remained perfectly well for many years and finally died from other causes. The prognosis, whether favorable or otherwise, must depend largely on the locality of the tumor and the performance of an early or late operation—the former giving the patient the better chance for recovery and long life—while the complete removal of the morbid growth gives the highest degree of safety attainable in these cases; therefore any obstacle in the way of the full accomplishment of this object must influence, unfavorably, the opinion of the surgeon in the question of prognosis.

The treatment of the spindle-celled sarcoma is necessarily entirely surgical; and the earlier the operation is performed the better will be the chances of the patient. It should be carefully remembered that every surgical operation, when possible in these cases, ought to be made before there is involvement of the lymphatic glands or impairment of the general health. Another very important rule in the management of these growths is, that *every particle of the tumor should be removed; let not a single morbid cell remain behind;* if a long bone is involved, amputation is the only effectual remedy. This operation should be performed eight or nine centimetres above the apparent limit of the disease, as shown in the bone substance —better still, where practicable, to amputate through an articulation, above the morbid growth, because there is frequently found in the medullary canal sarcomatous cells at a much higher point than in the bone. The performance of the complete operation is recommended by the following observations: First, ganglionic enlargement, when it exists, is promptly relieved by this procedure; secondarily, the contaminating juices stored up in the morbid growth, as well as the danger arising from its pressure on important organs, is completely removed, and the development of constitutional symptoms is postponed. Incomplete operations should not generally be performed; since this procedure accelerates the development of the morbid growth and gives it, in many instances, a malignant character; but there are unquestionably some cases in which the incomplete operation is absolutely necessary and consequently justifiable, thus, impending suffocation caused by a sarcomatous tumor would justify this procedure.

In connection with this paper I desire to report a

case of spindle-celled sarcoma, and, likewise to present the pathological specimen, which, I think, will be accepted as typical of the disease; but my chief interest centres in the complications rather than in the tumor itself.

C. F. H., school boy, æt. 12, born of healthy parents, nervous temperament, somewhat delicate, accustomed to complain of headache while in daily attendance at school, fond of athletic sports but rather easily fatigued, had passed safely the diseases of childhood; health equally as good after an attack of scarlatina, occurring when the child was about 9 years old, as it had been previously. The tumor was discovered by the mother about November 1, 1885. It was then about the size of a goose egg, and was situated posterior to the middle third of the left femur. The patient, notwithstanding the dimensions to which the growth had already attained, had never complained of anv pain or other inconvenience that could be attributed to the tumor. The family physician was finally called and continued in charge of the case until the patient died, which occurred Jan. 5, 1886. In this case there was observed, about the 1st of December, a mottled appearance of the integument, covering some parts of the tumor, which at first consisted of a few isolated red spots. These continued to increase in number and also to enlarge their dimensions. Soon there was observed a change in their color—the spots which primarily were red, slowly turning to a bluish-brown, then to a brownish-black; and inasmuch as new spots were continually making their appearance the parts presented a variegated and mottled aspect. These changes in the skin took place without any apparent elevation of the spots above the surrounding integument. I saw the patient in consultation with the attending physician, about the 20th of December. The tumor was then about four-fifths as large as when I removed it, January 4. The entire surface of the integument covering the morbid growth was mottled as already described. The tumor occupied at this time about the same relative position on the thigh as when first discovered by the mother, although it had increased considerably in size.

I did not see the patient again until the day that the operation was performed. The tumor, in the meantime had changed in form (being less oval than it was), had increased in size, and had descended—the upper border being one inch lower than it was when I made my first examination, and the mottled surface of the integument was now three times greater than at my first visit. The superficial veins covering the tumor were not much enlarged. The patient was anæsthetized—a linear incision was made of sufficient length to enable me to remove the entire morbid growth which was found imbedded in the deep connective tissue—its anterior surface approaching closely to the periosteum of the femur, the sciatic nerve passing through one third of its lower portion, grooving deeply the upper two-thirds of the posterior surface.

The operation was speedily accomplished and attended with very little loss of blood. There was some traction made on the sciatic nerve while liberating it from the tumor; it was also slightly incised at one point, and was completely detached from all the surrounding tissues throughout the entire length of the tumor.

The operation was performed under strict antiseptic precautions—the nerve was placed within the wound—drainage tubes introduced and the wound closed with iron wire sutures. The shock caused by the operative procedure was apparently slight and the patient reacted very well; but within a few hours it was observed that the mottled appearance which has been previously mentioned was extending very rapidly over the limb; and within thirty hours after the completion of the operation the gangrene had reached the toes and abdomen. The patient survived the operation about thirty-four hours.

I sent the tumor for examination to Dr. Frank Ferguson, pathologist of the New York Hospital, who reports as follows: "My Dear Dr. Watson: I send you the following statement of the tumor received from your office on Saturday last. The tumor measures, vertically, 12 centimetres; laterally, 8; and in its antero-posterior measurement, 6 centimetres. It weighs 304 grammes. Tumor is lobulated, and grooved in the median line posteriorly, to the depth 2½ centimetres, where it received the trunk of the sciatic nerve.

"It is limited by a delicate fibrous capsule except at the point of attachment of muscles. In these locations the tumor is directly continuous with the fibrous tissue of the muscles. It is composed of numerous small spindle-cells and much fibrous tissue. The vascular supply is abundant and the vessel walls are composed of tumor tissue. Diagnosis: Fibro-sarcoma. Yours sincerely, Frank Ferguson."

The chief interest in this case attaches to the involvement of the sciatic nerve in the morbid growth which unquestionably caused the vaso-motor disturbances and ultimately the gangrene following the operation.

PNEUMONIA IN THE OLD.[1]

BY F. H. PATTON, M.D.,

NATIONAL MILITARY HOME, OHIO.

It was formerly taught that the very robust were peculiarly liable to lobar pneumonia. It is now generally conceded that a strong and healthy constitution protects against the disease. Many recent writers have called attention to the liability of persons suffering from cachectic, carcinomatous, diabetic and other chronic exhaustive diseases, as well as those suffering from severe acute diseases, to be attacked with pneumonia. Diett, in his statistics of 750 cases of pneumonia, found only 18 per cent. to have occurred in previously healthy persons. Alcoholism, climate, chilling of the body, and other causes, have entered prominently into the discussion of the etiology of the disease, and some writers have referred to the debility of age as an exciting cause. Day, in his "Diseases of Old Age," published in 1849, gives a

[1] Read in the Section on Practice of Medicine at the Thirty-Seventh Annual Meeting of the American Medical Association

table of "Causes of Death in 1000 persons over 60 years;" 285 died of old age, 79 of bronchitis, 35 of consumption, and only 27 of pneumonia; but in the next page he contradicts this table and says "there is in all probability an enormous error in it," and gives pneumonia the highest per centage of deaths in diseases of the respiratory organs in the old; and gives a table of examinations of bodies of 390 persons who died at the age of 60 or beyond. One hundred and forty-nine of these died of diseases of the respiratory organs, and of this number 77 died of pneumonia, 26 of pleurisy, 18 of consumption, 10 of asthma, 8 of bronchitis, 4 of pulmonary congestion, and 3 from asphyxia. From the time of this book until Loomis's recent work, I have not consulted any author who gives special prominence to senility as an etiological factor in pneumonia.

Jürgensen says: "In the aged the symptoms are often so latent that the disease may very readily be overlooked;" also, "that he who loses many of his patients from senile debility may rest assured that many of these cases have been pneumonia." But in his comments on his English statistics, he says "that from the fifth to the seventy-fifth year the ratios do not exhibit very marked variations." Reynolds quotes Gunsburg's statistics of 5000 cases of pneumonia, which gives the largest number of cases (17 per cent.) between 20 and 30 years of age; next largest (16 per cent.) between 30 and 40; 7 per cent. from 60 to 70, and 11 per cent. from 70 to 80; he observes on these statistics, that the disease is comparatively frequent from 20 to 40, less so from 40 to 60, and very frequent and very fatal after 60 years of age. Aiken does not refer to its frequency in the old.

Quain and Niemeyer speak frequently of the latent form of the disease in the old, and the absence of pronounced symptoms, but nowhere refer to its frequency. Bartholow scarcely refers to it in the old, and Flint says: "No period of life involves either exemption from or a notable proclivity to the disease." His tables comprise none over 60 years, and he only observes that cases are not infrequent after that age. Nathan S. Davis is of the opinion that "It occurs more frequently in middle period of adult life, that is, from 20 to 40 years of age, than either earlier or later in life." Loomis, in his "Practical Medicine," third edition, says: "Some of the most reliable modern authorities state that nine-tenths of the deaths after the seventh-fifth year are from lobar pneumonia." He gives as his own opinion that 90 per cent. of deaths beyond the sixty-fifth year are from this cause, and that it is the most common cause of sudden death in the old. I have not been fortunate enough to find the authorities he refers to, but his statement caused me to look more carefully into the cause of death in the aged members of the institution under my professional care. At the Central Branch National Home for Disabled Volunteer Soldiers, there died last year 289 members at the average age of 60 years. It will be seen that there are here unusual advantages for observing the diseases of the old. It is not intended in this paper to discuss the pathology or treatment, or say much about the etiology of pneumonia in the old, but give some statistics. clinical and autopsic observations. I do not recall a single case that can be attributed directly to exposure, to inclement weather, or chilling of the body. In two or three cases men who were exhausted by a debauch took pneumonia and died promptly. With over 5000 old soldiers belonging to this "Home," it is not surprising that several hundred are of dissipated habits. In scores of cases men have been brought in, thoroughly chilled, who had been lying several hours exposed to winter storms; many have lain out over night, and we have had numerous instances of frosted and frozen feet and hands, but it has been the constant observation of the medical attendants that these men did not take pneumonia. Our cases have usually originated in the barracks or hospital, where the men are well housed, clothed and fed, and, with the exception of indifferent barrack ventilation, their hygienic surroundings are all that could be desired. In the last seven months there have been treated in the hospital, including about 250 permanently chronic cases, 610 members over 60 years. Of this number 63 had acute lobar pneumonia, 36 of whom died, 14 recovered, and 13 still remain under treatment. In the same time there were 53 deaths from all other causes, of persons over 60 years of age: 13 of consumption, 7 of senile debility, 5 of cancer, 4 of valvular disease of heart, 3 of apoplexy, of Bright's disease and exhaustion each 2, and of 17 other diseases each 1. In three of the cases of senile debility pneumonia was suspected in the closing hours, and it may have likewise occurred in some of the other cases and not have been detected where there was no autopsy. I must admit that in the autopsy of doubtful cases pneumonia was discovered in nearly all. In 35 autopsies pneumonia was discovered in 24 cases; 7 cases were double pneumonia, and in 15 different parts of the lung were invaded at different periods; of these 13 showed the disease to have begun at the base of the lung. In four cases only had the stage of gray hepitization been reached, and in no case was there abscess or gangrene.

The latency of the symptoms is the most striking feature in the history of pneumonia in the old. The ordinary symptoms are prominently absent, and the fatal malady will only be detected by the most careful examination. Chill is the ordinary precursor of pneumonia in earlier life. Niemeyer says: "Except in intermittent fever and septicæmia we nowhere encounter chills of equal violence." In the above recorded cases a history of chill was obtained in only five or six. Pain, cough or expectoration were not usually present, and in but a very limited number of cases were they distressing symptoms. A flush of face, slight rise of temperature, some increase of pulse and respiration were found in the majority of cases, but in only a few sufficiently striking to attract attention, if you had not been looking carefully for symptoms of febrile action. The temperature was usually about 100, the respiration rarely beyond 30, and in no case did I observe that distressing battle of the respiratory organs so common, especially in double pneumonia in young persons. In fact, our

patients usually died suddenly and unexpectedly, where there occurred double pneumonia or secondary invasion of a single lung.

Pneumonia has been the final cause of death in patients exhausted from softening of the brain, cerebral hæmorrhage, organic disease of the heart, pyelitis, cancer of the stomach, *fistula in ano*, and other diseases in patients between 45 and 60. My observations so far indicate that persons exhausted from phthisis have a greater immunity from pneumonia than any other class of patients equally debilitated. There are many old persons who have pneumonia of one lobe and are so little ill that they do not send for a physician. Many of our cases have been detected in old men coming to ordinary morning "Surgeon's Call," complaining only of feeling generally unwell. In these cases sometimes another lobe is invaded, and they usually die quickly.

Secondary invasion is often attended with a prostration, almost like shock from severe concussion of the brain. An instance of this: A man, aged 60, apparently in his usual health, went from camp to the city (three miles by train) one morning. At noon he was taken suddenly and violently ill at the house of a friend, and within two hours was sent to the City Hospital. The attending physician reported that he was received unconscious, cold extremities, rapid breathing, temperature 103, and almost moribund. He died within six hours of the attack. Autopsy revealed: Lower right lobe passing into stage of gray hepatization, indicating that the disease had existed here for several days; whole of left lung and middle lobe of right were œdematous and engorged with recent pneumonia. In a limited number of cases we have had stupor, mild delirium, slight elevation of temperature, lasting 24 to 48 hours, without any lung symptoms, when suddenly the lung would be overwhelmed and the patient die between night and morning visits, without attracting enough attention for ward-master or nurse to call a physician. I will give a brief clinical history of two cases, illustrating the fact that it is a common cause of sudden death in the old. It has been, in the last few months, the *most common cause*. Except in pneumonia we have had only two sudden deaths, one from hæmorrhage of the lungs, and in the other the aortic valves were thickened, immovable, calcareous masses.

Case 1.—G. M., a large, well nourished man, æt. 76, in good health (with the exception of feeble, irregular action of heart, with slight apex beat near epigastrium, which had been diagnosticated as dilatation of the heart), had been feeling rather unwell without any pronounced symptoms but general lassitude, was walking to his meals, etc. I carefully examined his lungs on the evening of the 10th and could discover nothing wrong. Temperature 99½. At the morning visit on the 11th the nurse reported the old man restless since five o'clock. His temperature was now 100, pulse 105 and feeble, respiration 28. Complained of distress in epigastrium; no cough, but physical examination discovered dulness over middle and lower lobe of right lung, and scarcely any air entering that part of the lungs. General appearance did not indicate any immediate danger. He was ordered stimulants and beef tea, which he took with relish, rested quietly for an hour, when he raised up, called the nurse, and suddenly expired.

Autopsy.—Almost entire right lung œdematous and engorged with blood. Dilated heart with fatty degeneration.

Case 2.—Patient 78 years old, was exhausted from genito-urinary disease, occasioned by an old stricture. He was able to walk around the ward and ride out in a carriage for an hour on fine days. I saw him at 5 P.M.; he complained that he had some colic, which he attributed to the too sudden arrest of a diarrhœa which had been troubling him for several days. He was sitting up and gave no evidence of being worse than usual. Without carefully examining him I ordered an enema, which was given at 6 o'clock, after which he was reported more comfortable, but continued restless during the first part of the night. He would not allow the nurse to call the physician, as he said, for a little colic. (I might add that he was a man of more than ordinary intelligence.) At midnight he called for the commode, got up, sank back into bed, and almost immediately expired.

Autopsy.—Middle and lower lobe of right lung engorged with blood, which was doubtless the immediate cause of death.

Our patients are all men well advanced in life and more or less disabled by wounds or diseases incident to the exposures and hardships of soldiers in active service.

The records of our Hospital for the last six months show that 48 per cent. of deaths in persons beyond 70 were from pneumonia, and 36 per cent. of those from 65 to 70 were from the same cause. If autopsies had been held in all cases the probability is that the per centage would have been higher. Day, in his old book, says: "It is, I fear, too often the case that in old persons this disease is first detected in the dead-house, and if not sought for there is altogether unrecognized." With modern methods of exploration and diagnosis, there is less excuse for the patient dying with the disease not diagnosticated; but I am convinced that the utmost vigilance of ordinary skill will not always detect the latent symptoms of this disease, which seems so prone to attack the old, especially when weakened by any debilitating cause, and which so often becomes the primary element in producing death, instead of the more chronic, more slowly developing and debilitating malady which invited it.

THE VALUE OF AN ATTEMPT AT ENUCLEATION OF A NEUROMA, WHICH SEEMED TO DEMAND RESECTION OF A NERVE.[1]

BY MOSES GUNN, M.D.,
OF CHICAGO, ILL.

If to my colleagues in the Surgical Section, the resection of a so considerable portion of the trunk of an important nerve as to prevent approximation and suture of the ends is as repugnant as it is to me, I

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

shall need to offer no apology for the introduction of the following case, which illustrates how completely lost in neoplasm nerve fibrillæ may become without impairment of their conducting function, and, also the possibility, in some instances, of enucleating the adventitious growth, without injury to the nerve.

C. B. H., age 36, admitted to the Presbyterian Hospital on August 10, 1885. Fourteen years ago the patient noticed a small lump on the inner aspect of the right arm at the union of the middle with the upper third, which was firm in structure, movable and painless. It increased slowly in size till two years since, when it had attained about half its present dimensions, which are three and one-half, longest, by two and one-half inches, shortest diameter. Three years ago it began to be tender on pressure, but the tumor itself had been always free from pain except that which had been excited by handling in the various examinations to which it had been subjected. Within the last two years he has experienced increasing pain in the ulnar side of hand extending to the little finger and ulner side of ring finger. The pain is dull and aching, accompanied by numbness, and occasionally by a sharp and burning sensation. Pain, at first, was nocturnal, but has become constant, and so severe as to greatly interfere with sleep. Appetite is good, and his bowels are regular in their action; but the patient is loosing flesh persistently. The tumor is extremely tender to the touch, exquisitely so at its upper portion where the nerve enters the mass. From the lower end of the tumor the nerve can be easily traced as it takes its course towards the notch behind the epitrochlea. Exsection of the mass by nerve resection was advised and consented to.

On August 11, operation was commenced by an incision four and one-half inches in length down upon the mass; the dissection was prosecuted, freeing the tumor from adjacent tissues down to the base and exposing the entrance and exit of the nerve. The nerve fibres became lost in the mass at three-fourths of an inch from upper, (apparently spreading out on the surface) and reappeared at about the same distance from lower end of the tumor. At this step of the operation the thought occurred to me to explore the mass by a longitudinal incision, before resection. I had, a few years previously, enucleated a considerable cyst from the trunk of the median, the fibres of which completely enveloped it. I, therefore, made a slight incision on the surface of the tumor, and at the depth of a couple of lines I found that I could easily separate a capsule of this thickness from the central mass; extending the incision through the whole length of the tumor, I was enabled to rapidly enucleate the adventitia proper from the capsule which was composed, principally, of neoplastic tissue involving and obscuring completely the widely separated nerve fibres. After the enucleation, we had, attached to the bottom of the general wound, from which it had not been dissected, a collapsed bag or capsule, continuous above and below, with the ulnar nerve. In this capsule, except at either extremity, no trace of nerve fibre was recognizable, so completely had such fibre been occulted by neoplastic structure. The wound was irrigated, and was drained by three tubes, one in the capsule and one on either side of it. The wound healed rapidly and kindly, the patient being discharged on September 1, free from all pain and impairment of nervous function in the parts to which the ulnar nerve is distributed.

The enucleated mass was subjected to thorough microscopic scrutiny by Dr. Ochsner, of the Physiological laboratory, and was pronounced "distinctly fibrous."

At this stage of our report we may pause to consider certain interesting features which challenge our attention. A tumor is developed in the centre of a nerve trunk separating the nerve fibrillæ from one another as the mass increases in size. Conservative instinct, so to speak, in life force springs to the relief of the over-strained nerve tissue and effects that relief by recruiting neoplastic tissue which increases with the demand till at the time of our observation the new element outmeasures the nerve, by at least, forty to one, completely occulting the nerve fibrillæ, yet in no wise interfering with nerve function. Conduction in both directions, and pain referred to ultimate distribution, caused by pressure of the tumor, exists. The pressure is overcome by removal of the tumor, pain ceases, function becomes normal, and gradual absorption of the neoplastic tissue takes place. This adaptiveness of nerve tissue to altered circumstances which we here observe, has its parallel in certain forms of spina bifida, where the arrest of development in the vertebral arch is, probably the result of the outward pressure of the sac which has had its origin in the anterior sub-arachnoidal space, and to which, as the sac is developed, the spinal cord becomes attached, spread out and attenuated, and with which it is at last more or less intimately blended.[1] Such attenuation and blending of the chord and nerves with the sac impairs in no way the transmission of nerve force in either direction. Such cases of spina bifida, and the case which I have here related, show that nerve tissues are capable of undergoing gross changes while they preserve their special characteristics and consequently their function.

Of what value this fact may prove to the practical surgeon in dealing with tissues on or in nerves remains to be seen. In the present case the result which immediately followed the operation and which seemed to promise so much, was not ultimately realized. The patient, after enjoying immunity for a time, and engaging in farm labor, returned on the 30th of November, a little less than four months from the operation with a reappearance of the disease in its former site. The tumor was yet small, but the pain had become considerable. It involved the same length of nerve as before, but the tumor was rather less than an inch in diameter. On careful examination and consideration I determined to resect the nerve, which operation I made next day.

An examination of the specimen showed a reproduction of the fibroma, which on splitting the nerve, was readily enucleated, leaving a sac of nerve and neoplastic connective tissue, as after the first operation, only much smaller and with a much less propor-

[1] For anatomy of spina bifida see London Lancet, No. xiii, 1885.—Prof. Humphrey.

tion of new elements. The connective tissue had largely disappeared so that Dr. Ochsner, who made sections of the specimen, says: "The amount of connective tissue is increased, and the nerve fibres are not so near each other as in the normal nerve, but further than this there is no change in the nerve structure."

The question may suggest itself whether a repetition of the former operation would not have been better practice than resection. That such an operation could have been made as readily as in the first instance, there is no doubt; but a neoplasm which recurs after complete removal, is not prone to cease in its habit of recurrence; on the contrary it usually recurs at shorter intervals, thus demanding radical measures. The possibility, however, of enucleation in cases where we should, from the general appearance of the mass, deem it impossible, should be borne in mind, and an attempt in that direction should be made before resorting to the more radical procedure. Such, I think, is the lesson taught by the above case.

Dr. Staples, of Minnesota, inquired if the function was restored after the second operation and resection?

Dr. Gunn answered that function was destroyed by the second operation. and that with a hope of re storing it, he had opened the sheath of the median nerve, separating its fibres so as to engraft the distal end of the ulnar nerve upon it, and that the function was being gradually restored; in explanation of this fact, he expressed the belief that the restoration of function in a severed nerve was not necessarily dependent upon the reunion of the particular fibres severed, that the fibres could interchange function, and that function was determined rather by the machinery at the ends of the nerve than by the fibre itself.

A LARGE PHARYNGO-LARYNGEAL FIBROMA—CURED.[1]

BY E. FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE, AND PROFESSOR OF DISEASES OF THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, CHICAGO.

E. G., farmer, aged 47, was sent to me January 7, 1886, by Dr. Chas. Enfield, of Scranton, Iowa. He was supposed to be suffering from a fibrous tumor of the larynx.

The patient stated that about two years previously he had begun to experience some difficulty in swallowing, which had been gradually increasing until deglutition had become almost impossible, in consequence of which he had emaciated, having lost about fifty pounds, and had become very weak. Recently there had been much difficulty in sleeping on account of choking spells. A few months before I saw him a physician, whose name I did not learn, had removed a portion of the tumor, which, upon microscopic examination, he had pronounced fibrous in character. The patient had experienced considerable relief after the operation, but the tumor had continued to grow and for some months another physician had made ineffectual attempts to reduce its size by means of caustics.

The tumor was not visible by depressing the tongue, but on a laryngoscopic examination I found a large growth filling the laryngo-pharynx and vestibule of the larynx. It rested against the epiglottis in front and rose as high as its upper edge. The tumor completely hid from view all the larynx except the epiglottis; but a welt which ran downward, backward and inward from near the left margin of the epiglottis had so much the appearance of the ary-epiglottic fold that I at first supposed it to be that tissue with the tumor projecting externally and internally below it.

A small ulcer on the upper surface of the growth seemed to have resulted from some caustic applications. With great difficulty I succeeded in getting the epiglottis thrown forward enough to show that the growth was not attached to it.

A small lobe about half an inch in diameter presented on the right side of the larynx, in a position apparently just above and internally to the ary-epiglottic fold. This I secured and removed with little difficulty by the steel wire écraseur.[1]

Bleeding was not excessive, but it prevented further operations at the time. The piece was examined by Dr. A. J. Ochsner, of the Presbyterian Hospital, of Chicago, who pronounced it fibroid in character, though not entirely fibrous. The next day I passed the wire loop of my écraseur carefully between the larger part of the tumor and the epiglottis, and then twisted one side of the loop around the end of the growth and along the posterior pharyngeal wall, and thus engaged a mass which, as it presented in the throat, appeared about an inch in diameter. I pulled the wire taut, securing a firm hold of the growth, and then gradually tightened the loop by means of the milled screw. The growth proved to be so hard that I finally broke the steel wire (No. 5 piano wire) before it was entirely detached; but I loosened the écraseur and fastened to the end of the broken wire a new one, which I succeeded in drawing down about the tumor. The écraseur was then slipped over the wires and its end passed down into the throat. The wires were fastened tightly, and after a few more turns of the milled wheel I had the satisfaction of removing about three-fourths of the entire growth. This was irregularly nodular in form, had a smooth surface, was hard to the touch, and measured 1⅝x⅞ inches in diameter.

There was very little bleeding, and immediately afterwards I could plainly see the ary-epiglottic fold of the left side, and most of the epiglottis, but the whole vestibule of the larynx, with the exception of a very small chink along the epiglottis, was filled with

[1] Read in the Section on Ophthalmology, Otology and Laryngology at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] The instrument which I use for this purpose is a modification of what is frequently termed Jarvis snare, made for me by Sharp & Smith, of Chicago. It has upon the handle a slide to which the wires are attached, which enables the operator to tighten the loop quickly without the aid of the milled wheel, which is subsequently screwed down to complete the cutting off of the tissue. It has several tubes of different lengths and shapes, any of which may be easily attached to the handle.

a portion of the tumor, which also covered the right ary-epiglottic fold and pressed against the pharynx on that side. The large mass removed at this time was found by Dr. Ochsner to be a typical fibrous growth.

On the day following the operation the whole mass in the vestibule was hidden from view by dark clotted blood. Three days later it had a grayish, gangrenous appearance, and emitted an offensive odor. At this time I succeeded, after one or two attempts, in engaging the mass in the snare and cutting it off. I then found that the vocal cords could be easily brought into view, and that the whole lower and left lateral portions of the larynx were in a healthy condition; but a mass of the growth the size of a large chestnut still pressed upon and partly hid the right ary-epiglottic fold.

The mass last removed measured about three-fourths of an inch in diameter, and its surface to the depth of nearly an eighth of an inch had a gangrenous appearance. This was examined microscopically by Dr. N. S. Davis, Jr., who found it mostly fibrous.

Two days later I removed another piece the size of a chestnut, and at the next sitting was enabled to see the small remnant of the tumor's pedicle, which was about half an inch in diameter and grew from the right side of the pharynx about half an inch below the upper margin of the right ary-epiglottic fold. I removed this with the snare, and subsequently thoroughly cauterized its root with the galvano-cautery.

Three weeks after the first operation the patient returned to his home thoroughly cured, having gained ten pounds in weight.

Dr. Enfield recently informed me that the patient has no signs of a return of the growth. Tumors of this kind are very rare in this situation, though small papillary growths are not infrequently met with at the upper part of the pharynx. The successful operations in this case well illustrate the wonderful adaptability of the steel wire écraseur for the removal of tumors from cavities difficult of access, and the efficiency of the laryngoscope in enabling us to lengthen the span of human life. Without the snare I doubt if the growth could have been removed; without the laryngoscope the snare would have been of no use and this patient must soon have succumbed to his disease.

64 State Street.

CASES IN WHICH IRIDECTOMY PERFORMED FOR GLAUCOMA IN ONE EYE CHECKED THE GLAUCOMATOUS PROCESS IN THE OTHER.

BY M. LANDESBERG, A.M., M.D.,

OF NEW YORK.

Clinical experiences have taught us to regard glaucoma as one of the diseases which, after it has attacked one eye, will, with few exceptions only, sooner or later also affect its fellow. For this very reason, and for the well established fact that in a certain per centage of cases iridectomy, performed for glaucoma in one eye, is apt to be followed by the sudden development of acute glaucoma in the fellow-eye, which had not shown before any symptom whatever of the disease, Fienzal felt justified in proposing preventive iridectomy on the healthy eye in every instance when the other had to be operated upon for glaucoma. Abstraction made from all other objections against such a far-reaching proposition, I emphatically am at issue with the latter, as my observations tend to show *that there are cases in which iridectomy successfully performed for glaucoma in one eye may check the glaucomatous process and bring about permanent recovery in the other, which has not been treated.*

I am perfectly aware that I have to deal with a subject which has no counterpart in the whole ophthalmic literature, and which seems to have escaped the notice of the most prominent oculists, as I had occasion to learn from the personal intercourse with the latter during my recent trip through Europe.

In the following cases I record facts as they have occurred to me in my practice, and which I have studied with the careful attention and the unbiased mind so as to exclude any possible source of error. The cases are as follows:

Case 1.—Mrs. K., 63 years of age, presented herself *with a typical acute glaucoma* in her right eye. The left eye showed ocular tension pathologically increased. Pupil sluggish and slightly dilated. Anterior channel shallow. Spontaneous arterial pulsation and pronounced venous engorgement of the retina. Emmetropic refraction with vision $\frac{15}{20}$. Near point greatly receded. Marked loss of sensibility to light in the peripheric parts of the upper inner quadrant of the visual field. The eye had remained healthy until seven months ago, when it experienced for the first time the phenomena of a colored halo around a flame, and obscuration in the visual field, which are the pathognomonic symptoms of the prodromal stage of the glaucomatous process. The attacks were at first transitory and recurred after long intervals of perfect health, but in the last weeks they have become more frequent and of longer duration. For the last few days, since the outbreak of acute glaucoma had taken place in the right eye, a sensation of pressure and tension has become permanent in the left one.

Iridectomy successfully performed upon the right eye had the effect to influence in the most favorable manner the condition of the left eye, the complete restoration of which was accomplished in the second week after the operation. No morbid alteration whatever remained, no relapse occurred, and no morbid sensation was ever experienced by the patient during a further observation of eight years and a half.

Case 2.—Mrs. B., 49 years of age, came under my notice with the following condition: *Right eye*, typical acute glaucoma. *Left eye*, ocular tension increased; pupil slightly dilated, very sluggish; anterior chamber shallow; cornea hazy; background of the eye veiled; pulsation of the retinal arteries easily produced by pressure on the eyeball; marked venous hyperæmia of the retina; with the naked eye vision $\frac{15}{50}$, with the help of concave 18 vision $\frac{15}{30}$; light perception dulled in the peripheric parts of the upper

half of the visual field. The subjective complaints are: Pressure and tension in the eye, and perception of flashes of light and of fire-balls in the visual field. No similar attacks had preceded, and only the appearance of colored halos around a flame, with temporary cloudiness in the visual field, have been experienced during the last month.

I performed iridectomy first upon the right eye, with perfect success, deferring the operation upon its fellow for the next day. During the interval such a marked improvement took place in the left eye that I did not feel justified in proposing the intended operation, to which patient would hardly have consented. The restoration of the left eye to normal condition and refraction was accomplished on the third day after the operation. The result remained permanent during a further observation of nearly eight years.

Case 3.—Merchant D., 53 years of age, applied to me with sub-acute glaucoma in the right eye. The left eye showed: M. $\frac{1}{9}$, S. $\frac{12}{30}$. Field of vision normal; pupil sluggish, slightly dilated and somewhat irregular; ocular tension increased; marked venous hyperæmia of the retina; veins dark and tortuous. The prodromal attacks of glaucoma have repeatedly occurred during the last six months, and vision has slightly decreased in the last weeks.

Iridectomy successfully performed on the right eye had the effect to bring about complete restoration in its fellow. All functions became normal and remained in this condition during a further observation of five years.

Case 4.—Mrs. L., 47 years of age, somewhat prematurely old, emphatically denies having ever had any trouble with her eyes until the day before, when, a few hours after great mental trouble had preceded, symptoms of inflammation suddenly developed in her left eye, which were accompanied with rapid loss of vision. After the paroxysm had somewhat abated by topical and internal remedies, patient noticed that a morbid change had also taken place in the right eye. About fifteen hours after the attack I ascertained the following condition: *Left eye*, acute glaucoma, with intense symptoms of inflammation. *Right eye*, slight pericorneal injection; central haziness of the cornea; pupil sluggish and somewhat dilated; ocular tension increased; background of the eye veiled and markedly hyperæmic; arterial pulsation effected by pressure upon the eyeball; one upper venous branch excessively tortuous; vision greatly diminished.

I proposed iridectomy on both eyes, but was only allowed to have it performed on the left one. The operation was followed by immediate relief in either eye. The next day showed the right eye absolutely free from any morbid alteration and vision, according to the statement of the patient, as good as ever before. Normal conditions and functions were ascertained on subsequent examination. The result remained stationary during a further examination of nearly five years.

Case 5.—Mrs. S., 58 years of age, came under my notice with subacute glaucoma in her right eye. The left eye presented the following condition: Hm. $\frac{1}{15}$, vision from $\frac{10}{15}$ to $\frac{10}{12}$; no power of accommodation; perception of light diminished in the upper peripheric parts of the field of vision; refracting media normal; pupil sluggish, slightly dilated; ocular tension pathologically increased; marked venous hyperæmia of the retina. Periodical obscurations, perception of flashes of light and of colored halos around a flame have repeatedly occurred during the past few weeks

Full recovery took place in the left eye after iridectomy had successfully been performed on the right one. The result remained stationary for thirteen months, when the old complaint reappeared after a relapse had occurred in the right eye. Sclerotomy made upon the latter had a beneficial effect upon either eye. Normal functions were restored in the left eye and were maintained during a subsequent observation of nearly five years.

40 W. 34th Street, New York.

MEDICAL PROGRESS.

Circumcision Under Cocaine.—Dr. E. R. Palmer, of Louisville, says that, desiring to perform circumcision under cocaine, he determined to use Corning's method of sequestration. "The patient, a young man, 20 years old, with a complete congenital phimosis, was seated in a chair, and the penis was seized by my assistant and drawn upon firmly. A Martin bandage, seven-eighths of an inch wide and a yard and a half long, was next applied, the first turn being made behind the scrotum to prevent slipping, and the bandage being then wound tightly back and forth from the symphysis pubis to the corona and back again. An ordinary hypodermatic syringe was next filled with a 6 per cent. solution of cocaine, and the needle, directed toward the extremity of the penis, was passed at four different points through the skin over the glans, a fourth of the contents of the syringe being discharged each time into the subcutaneous tissue. No attempt was made to introduce the drug from the mucous surface. In about three minutes I began adjusting a Rogers clamp, occupying as many more minutes in getting it placed to suit me and screwed down. The prepuce was removed with one stroke of a pair of long curved scissors, and the clamp removed. The dorsal artery was found not bleeding; the frænum was not cut. The mucous membrane was split up, and some eighteen sutures leisurely introduced. The bandage was now removed and, contrary to expectation, no hæmorrhage ensued. Less than a drachm of blood was lost during the entire operation. The wound was dressed loosely with absorbent cotton wet with equal parts of listerine and water. Not a twinge of pain was felt after the last needle-puncture had peen made. The young man, of nervous temperament, was at first quite pale, but later assisted in the stitching, and as he washed his hands after the operation remarked that his penis still felt dead. The wound healed in forty-eight hours by first intention.

"The advantages of the bandage are several: It wholly controls bleeding, it localizes the action of the

cocaine, and it increases the facility with which the penis can be handled during the operation. The reverse direction for application, that is, from behind forward, will be found the best, because the easiest, and fully effectual."

Dr. Palmer adds that he performed the operation a second time in the same manner with equally good results as regards anæsthesia. But the continuous suture was used, and although perfect coaptation was accomplished, some trouble was experienced later from swelling and from syphilitic induration of the parts. It was attempted to remove the suture, but this was found impossible, and the writer thinks it would have been better had interrupted sutures been employed. The case is now doing quite well, however, and the result will be good.—*Medical Record*, September 25, 1886.

TREATMENT OF WHOOPING-COUGH BY NASAL INSUFFLATION.—In an extensive epidemic of this disease, in February of this year, which was particularly prevalent among very young children DR. GUERDER treated his cases, at first, by disinfecting the sick rooms with carbolic acid and then using a syrup composed of

Syr. diacodii,		
Syr. belladonnæ, aa	gr.	50.00
Acidi phenici		.50
Potassii brom		4

This was administered in doses of a coffee spoonful once or several times a day, according to the age of the patient. Only a moderate degree of success attended this treatment, and when the medicine was suspended the number of paroxysms became as great as before. The continued use of belladonna was also found very undesirable in young children, as it produced decided dilatation of the pupil, delirium, and a condition of narcosis which it was deemed imprudent to continue for long periods of time. The nasal catarrh which accompanied the disease, the injection of the nasal mucous membrane, and the probable parasitic character of the disease suggested the idea that the paroxysms of cough and asthma were of a reflex character, and might be susceptible to a similar course of treatment to that which has been found efficient in hay fever. A powder was therefore made of equal parts of boric acid and burnt coffee, and blown upon the nasal mucous membrane morning and evening. Thirty children were thus treated, seven being under one year of age, seven between one and two, six between two and three, ten between three and eight. Seventeen of these received almost no treatment except the insufflations, while the others had already received some benefit from the use of the syrup, the formula of which has been given. In all the cases benefit began to be apparent in from two to six days, the paroxysms of coughing becoming less frequent and less intense, the vomiting, the epistaxis, and the nasal catarrh diminishing or disappearing. The general condition also improved, and in fifteen or twenty days the patients were apparently well. This result is the more satisfactory since the cases occurred among poor people surrounded by bad hygienic conditions, and the children were out of doors much of the time in cold and wet weather alike. In those cases in which the insufflations were practiced at the beginning of the disease, the course was invariably a mild one, and a cure was effected in eight to fifteen days. Powdered benzoin which was recently recommended by Michael, of Hamburg, for this disease, to be used also by insufflation, gave good success, but not so satisfactory as the mixture of pulverized boric acic and pulverized roasted coffee.

DR. J. BACHEM, of Bonn, has treated sixteen cases by blowing into the nostrils a mixture of quinine muriat (3 parts) and pulv. acaciæ (1 part) once or twice daily. Three weeks was the average time of cure.—*Archives of Pediatrics*, August, 1886.

MICROSCOPICAL DIAGNOSIS OF A NEPHRO-INTESTINAL FISTULA.—Nephro-intestinal fistulæ are certainly rarer DR. R. WERNICKE, who publishes his observations in the *Anales del Circulo Médico Argention*, has only met with three cases in literature, and so believes his to be the fourth. In May last he was asked by Dr. Montes de Oca to examine a sample of urine in a flask. The color was yellow and there was some turbidity, also a copious yellow sediment containing grey clots of irregular shape. The reaction was alkaline, and the liquid after filtration contained albumen. The turbidity was evidently due to putrefactive microbes and leucocytes. The sediment on microscopical examination showed the presence of leucocytes, red blood-corpuscles, vesical epithelium, caudate or pyriform epithelial cells from the pelvis of the kidney, granular casts, particles of fatty matter (highly refracting and of a yellow tint), quantities of small aggregations of granules (highly refracting, some of the granules being attached to one another, and some surrounded by a yellow, structureless envelope, being in fact coagulated milk); and lastly, a number of striated muscular fibres, stained with biliary pigment, the striæ being more or less obliterated, according to the stage of digestion which had been reached. As there was no question that the whole of the contents of the flask had been passed from the urethra of a man, there could be no doubt that a communication existed between the urinary and digestive passages. The cause of this ulceration was also diagnosed by further microscopical examination of the sediment, which revealed the existence of tubercle bacilli, which were so clearly recognized both by their form and their behavior with reagents as to leave no doubt in Dr. Wernicke's mind of their precise nature. The case not being under his care, no clinical details are given. It is seldom, however, that the microscope alone enables so much of a diagnosis to be made in a rare and intricate case such as this.—*Lancet*, August 21, 1886.

NARCEINE FOR INFANTS.—LABORDE reports that in many diseases of children narceine is superior to morphine. It induces sleep and diminishes bronchial secretion. It is very advantageous in whooping-cough and nocturnal coughs. As an analgesic it has not the power of morphine. It is administered in syrup or in suppositories.—*Journ. de Méd. de Paris*, July 25, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 16, 1886.

THE TRANSMISSION OF YELLOW FEVER BY MOSQUITOS.

In the *American Journal of the Medical Sciences*, of October, 1886, is a most interesting article on this subject by DR. CHARLES FINLAY, of Havana, who is already known to readers of Spanish medical literature as having contributed some interesting articles on subjects connected with yellow fever. Five years ago he put forward the view that whereas yellow fever is not spontaneously transmissible by infection through the air nor by contact, it can be communicated by inoculation; and in searching for a natural agent capable of communicating the disease by inoculation he fixed upon the Culex mosquito, which is common in Havana, as the most likely agent. This insect has also been described as the Culex fasciatus. "Although great differences are observed in the duration of the successive phases of development of the Culex the following may be taken as a fair average: Every mosquito that stings may be considered as a fecundated female, and will probably lay eggs within a few days after its bite, provided it can find water upon which to lay them. In water-jugs standing in bedrooms, the insect is often found depositing its eggs either on the sides of the jug or upon the water. The eggs are commonly hatched, producing minute wrigglers, between the second and fourth day, in summer; some are delayed much longer, and those that are deposited outside the water may remain a long time in the dry state without losing their vitality. The wrigglers grow more or less rapidly according to the nutritive material contained in the water, the temperature, etc., but they probably pass into the pupa stage within twelve or fourteen days. This stage is always short, not lasting more than two or three days, the fully developed mosquito emerging from its aquatic case a fortnight or three weeks after the egg was laid." This much natural history seems necessary to a proper understanding of how one infected mosquito conveyed to a healthy place, if the temperature and altitude be suitable, might, on Dr. Finlay's theory, inoculate the disease on a healthy subject who might be bitten by it, "and, according to the usual rate of incubation, at the end of a fortnight or three weeks, the consequent attack of yellow fever would be at its height. In the meantime the imported insect would have produced a whole brood of its own species, probably in the vicinity of the place where the patient is lying; thus providing the necessary conditions for the subsequent propagation of the disease."

From careful investigations and experiments Dr. Finlay finds that the insect under consideration, when suddenly transported to heights above 3,000 or 4,000 feet, must find it difficult to exert its functions, and that it would never, of its own accord, seek elevations which render its flight difficult." From his experiments he finds it probable that the limits of functional activity for this insect (the Culex fasciatus) are: as regards temperature, between 60° and 100° Fah., though it will revive after having been chilled to 32°, or warmed to 105° F.; as regards altitude, from the level of the sea to 3,000 or 4,000 feet. "Now the limits which most observers assign to the propagation of yellow fever are temperatures ranging from 60° to 90° F. ('Barton's Reports,' 1852, pp. xiii and 283); a general temperature of 32° F. having, however, proved ineffectual to prevent the recurrence of the disease (in the case of the 'Plymouth'), when a tropical temperature was produced. As regards altitudes, the highest limit at which it has been observed seems to be 400 feet above the level of the sea." There are some mosquitos which are entirely nocturnal, and these necessarily lead a more stationary existence than those which come out in the day, as the latter often have to follow an intended victim from the house, or to some distance in order to accomplish their object. When it succeeds in stinging a person it will generally take up its quarters at that place, as its digestive act may require two days or more, and will there lay its eggs.

For a further comprehension of this subject it is well to say that the sting of the Culex mosquito is a slender hollow needle from $\frac{1}{30}$ to $\frac{1}{40}$ mm. broad and 2 mm. long, with its sides roughened by a series of transverse ridges and its point armed with teeth. "This needle penetrates through the skin until it

reaches one of the capillaries of the corium, generally to the depth of 1 to 2 mm., remains in position during a space of from one to five minutes, and, after being withdrawn, will continue protected by its sheath until the insect's next bite. I have been able to prove that the sting often retains spores of microscopical fungi, which may be made to develop by keeping the proboscis in a sterilized cell, and I once found upon the side of the sting a finely developed bunch of spores like those observed in yellow fever blood cultures by Dr. Sternberg, . . . whence it is to be inferred that it may likewise retain upon its outer surface or inside of its sheath, such minute disease germs as are generally believed to occasion most of the zymotic diseases. If so, the sting of the mosquito having been impregnated with the animal juices during the operation of stinging, may constitute an appropriate soil for the preservation or even for the culture of those germs; might it not, indeed, be the 'intermediate host' necessary for some phase of their development?"

Dr. Finlay's account of his inoculation experiments is very interesting, and it is to be regretted that he had not more time at his disposal, and more yellow fever patients and mosquitos—for, strange as it may appear, the two last are not always to be readily obtained at the same time, even in Havana. Twenty-four persons have been inoculated by him since June, 1881. One of these has died of yellow fever: he was inoculated in November, 1883, without any visible result, and was attacked in June, 1884, with a malignant form, which was the result of contagion. Two of those inoculated left the country and were lost sight of the first summer after the inoculation. Twenty-one remained under observation for from one to four full summers. Six were followed, within from five to twenty-two days, by an attack of fever, the exact counterpart of mild attacks of yellow fever, and which were proved afterwards, by observation, to have conferred immunity. Eleven inoculations, though not followed by morbid manifestations within the limits of incubation, appear likewise to have conferred immunity. In four cases, not followed by immediate manifestations, a mild attack of yellow fever was observed at the end of several months. It is upon the six successful cases that he relies in order to prove the aptitude of the Culex mosquito for transmitting yellow fever. "If this be once admitted, it must follow that the disease is actually so transmitted, since it must constantly happen, in a place like Havana, that unacclimated subjects are stung by mosquitos which have previously bitten yellow fever patients." Dr. Finlay concludes that while yellow fever is incapable of propagation by its own unaided efforts, it may be artificially communicated by inoculation, and only becomes epidemic when such inoculations can be verified by some external agent, such as the mosquito. A careful study of the habits and natural history of the mosquito shows a remarkable agreement with the circumstances that impede or favor the transmission of yellow fever. From Dr. Finlay's observations, and information, the disease is incapable of propagation wherever tropical mosquitos do not or are not likely to exist, ceasing to be epidemic at the same limits of temperature and altitude which are incompatible with the functional activity of this insect; and it spreads readily wherever they abound. Hence he thinks it may be inferred that these insects are the habitual means or agents of its transmission; though, of course, there may be other factors. It is at least a remarkable coincidence, if nothing more, that in the summer of 1885 mosquitos, especially the diurnal species, were scarce in Havana, but became more numerous during the autumn months; and there was a remarkable scarcity of yellow fever cases during the summer months, which were unusually hot, but the cases became more numerous in October and November, in which the weather was rather mild. Dr. Finlay's paper is worthy of great attention, especially in view of the proposed Yellow Fever Commission, which, it is to be hoped, will thoroughly investigate the subject.

THE HAIR AND TEETH OF THE FUTURE.

There seems to be an inherent morbid tendency in some people which leads them to frighten their fellow men. Every little while some one appears on the literary horizon and frightens us into hysterics by predicting something awful that is to happen to our thirty-fourth century descendants. Scarcely do we recover from some professor's prediction as to the fate of American medical colleges and doctors before those of us who are so unfortunate as to be subject to malaria sink in a sea of despondency because we are told that the *bacillus malariæ* and the *phylloxera scientiæ* are one and the same. The rigor caused by this news has scarcely passed into the febrile stage before a monster earthquake is predicted.

And now come MR. VIRGIL G. EATON and DR. WILLIAM A. HAMMOND to tell us that our descendants (of some time about the year 3500) will be innocent of hair and teeth. We cannot dismiss this prediction by asking "How do you know?" Inasmuch as they have declared that such will be the case we must, of course, believe that they have some se-

cret and special information on the subject; that they have been to the roots of the matter (of both hair and teeth), and have obtained facts which cannot be controverted. After having such aspersions cast on our thirty-fourth century posterity, it is all the more galling, to those who retain their hair and teeth, that these writers should insinuate that baldness and toothlessness are the results of higher education and cultivation, and advanced civilization. And to those who live in the West the dregs of this cup of bitterness will be found in the following sentence: "Bald-headed men are most plentiful in New York and Boston. After these come Philadelphia, Washington, and the Western towns."

Will this be an unmitigated evil to posterity? The dental colleges will then live only in history, and the barber, like Othello, will find that his "occupation's gone." The medical literature of that day will perhaps contain a short reference to a disease mentioned in the infant history of medicine as "Toothache;" and doubtless some medico-historian will show that its disappearance from the earth was caused by a change in the meteorological conditions of the planet in the year 2900. The Professor of the History of Medicine will no doubt lecture learnedly on the fatal affection of the nineteenth century known as "dentition," and will ascribe its disappearance to improvements in sewer pipes and house drainage. He will look up *alopecia* in the medical dictionary, and finding that it is so called because *foxes* were supposed to be afflicted with it, will marvel greatly that even so late as the twentieth century the doctors could not cure *fleas*. The archæologist will perhaps find an old toothbrush, and straightway construct the wondrous animal which possessed such a tail. And what a very treasure it will be to him when, in excavating the site of an ancient barber-shop, he finds a bottle with the curious inscription: "Scalpine; positive cure for baldness." Perhaps some daring scientist will try some of it on a cubic centimetre of his own glossy scalp—and regret it the remainder of his days. False teeth, teething rings and hair-pins will be deposited in honorable positions in museums. No doubt Paracelsus will then get the credit of having invented the dental engine, and given it a name which, like many others of the nineteenth century, has no signification, and no other merit than length. In that day an infant King of Spain will not have a dentist appointed for him before he has taken leave of the last three inches of his umbilical cord. Roast beef will be a thing of the past, and the Earth will be dotted over with mush factories.

May we not, therefore, accept this fate of posterity with perfect resignation? After all, the prospect of our thirty-fourth century descendants rising up and reviling us for having worn hats and cooked our food will not fill us with dismay—for it is asserted that such will be the causes of their baldness and toothlessness. It is entirely possible that in that day and generation there will be no need for hair and teeth; and if some one then living chances to find in the *Medical Record*, of October 2, that "Mr. Eaton's curious observations tend to confirm the view that the per cent. of baldness is in direct proportion to the amount of education and cultivation," it will probably be considered "bad form" to be guilty of one single hair. To show that Mr. Eaton and Dr. Hammond are not far from the truth, the foreign journals announce that President Grévy, now almost 80 years of age, lost his first tooth a few weeks ago. Possibly the heraldry of that day will be somewhat changed, and some blue-blooded doctor will proudly wear on his gynecological case the inscription: *On a scalp hairless, a decayed molar rampant.*

THE PNEUMATIC CABINET AGAIN.

Some weeks ago, in an editorial article on the Pneumatic Cabinet, we suggested that the rental of the Cabinet was too high for many physicians who might be perfectly competent to use it intelligently, and that there was no good reason why the Cabinet should not be sold outright to those who could furnish satisfactory assurance to the Board of Managers that it would not be used in an unprofessional manner. We have just received a communication from the Pneumatic Cabinet Co., saying that, mainly on our suggestion, the Directors have determined to sell the instruments. During the early period of its existence and trial of test and experiment, the possibilities for misdirection of the instrument, and perhaps fatal injury, made it necessary that the greatest caution should be exercised in selecting those who should bring its merits and demerits before the profession. The Directors now say that no reason for a restrictive policy remains, and they have resolved to accept our editorial suggestions, and sell the Cabinet. We will now further suggest that the same caution be used in selling the instrument as was used in renting it. It has been but a short time since a daily paper of this city contained an interview with a professor of *chemistry* in a Homœopathic college, who claims to have one of these machines, and manages to pose before the public as the next thing to a raiser of the dead. Whether he really possesses the instrument under consideration we do not know; but this shows that

some people should not be trusted with the instrument.

Our editorial comment of a few weeks ago was not written with the purpose of bringing the instrument into disrepute, but to bring about just what the Directors have determined to do. Now that they have taken this course, and if the price of the Cabinet be within the reach of men of moderate means, there is no further cause for complaint. As we have said before, we believe this instrument to be a very valuable addition to therapeutics. No claim has been made for it that it will cure every or many diseases. It has been honestly investigated by competent men, and its dangers as well as its advantages pointed out. In the hands of a careless or incompetent person it may do very great injury, but this is no more than may be said of any therapeutic agent. Under these circumstances, and so long as the Directors wisely restrict its use to reputable physicians, not advertising it to the public, it deserves the careful attention of reputable physicians. It has been objected to it that it was not invented by a professional man, and that it is made under a patent. The same objections, which are not objections, could be brought against other articles in constant use by physicians in the practice of their profession.

MILK INSPECTION IN CHICAGO.

On Tuesday, October 12, Health-Commissioner DeWolf, of this city, put in effect an order, which he had previously issued, prohibiting the sale of milk from infected distillery sheds. Besides the presence or danger of pleuro-pneumonia in these sheds, those who have looked into the matter assert that the distillery sheds are in a most filthy condition. And beyond the question of the presence of disease in the sheds, the swill milk business, which has existed in Chicago, is illegal and criminal. There are two Sections (1410 and 1731) which are sufficiently explicit in this matter. The former prohibits the keeping or selling, bringing or sending into the city swill milk, or milk from cows or other animals that for the most part have been kept in stables or that have been fed on swill, or milk from sick or diseased cows or animals. The latter Section provides that "Milk produced from sick or diseased cows and all milk obtained from cows kept in distillery yards or pens and fed on distillery slops or waste shall be deemed impure and unwholesome." And further than this, the Health Department of Chicago is vested with authority to abate the filth of distillery sheds.

There is nothing, in the way of food, that has such a direct bearing on the health of the community as the purity of milk. The fact that a large number of persons have their fortunes invested in the business of distributing impure milk has no bearing on this question. If they suffer loss from being in an illegitimate business they have only themselves to thank, and their money should not be placed in the scale with the lives and health of hundreds or thousands of people who subsist wholly or in great part upon milk.

SOCIETY PROCEEDINGS.

AMERICAN GYNÆCOLOGICAL SOCIETY.

The Eleventh Annual Meeting, held in the Hall of the Johns Hopkins University, Baltimore, Md., September 21, 22, and 23, 1886.

(*Concluded from page 417.*)

TUESDAY, SEPTEMBER 21, FIRST DAY.

AFTERNOON SESSION.

DR. T. ADDIS EMMET, of New York, read a paper entitled

PELVIC INFLAMMATIONS; CELLULITIS VERSUS PERITONITIS.

In this country, the term cellulitis has come to signify pelvic inflammation without reference to the special form, but its origin is supposed to have been in the connective tissue. So close is the relation between the connective tissue and the peritoneum, that it seems impossible for inflammation to be present in one without affecting the other. There are situations, however, as between the uterus and bladder, and between the uterus and rectum, where cellulitis might exist without involving the peritoneum. Inflammation in these situations tend to resolution and so the tissues soon regain their healthy condition if suppuration does not take place. After septic poisoning, the peritoneum rapidly becomes inflamed and adhesions occur, the circulation in the blood vessels becomes more or less obstructed and the action of the absorbents is greatly impeded. Finally a condition is produced which remains long after the symptoms have subsided and one not prone to change or amenable to treatment. In such cases a fresh attack is provoked by slight causes.

It has been objected that when the abdominal cavity is opened for the removal of the ovaries, very slight evidences of inflammation are found. In a recent case I expressed the opinion from the vaginal examination that a thickened and shortened left broad ligament would be found, at the operation no broad ligament was found, but there was an enlarged tube lying against the side of the vagina. Similar cases have been noted. I should explain these cases in this way. If there is an inflammation between the folds of the broad ligament, it must involve the peritoneum. As a result of the inflammation, the con-

nective tissue disappears and adhesion of the opposing surfaces takes place. The broad ligament is flattened out so that Douglass' cul-de-sac disappears on that side. The vaginal wall is raised up so that it and the tube lie in contact. This is the condition found by the surgeon when he operates for the removal of the diseased fallopian tubes. In all these cases I feel satisfied that there has been inflammation of the connective tissue. I think that the inflammation has been secondary to the cellulitis in every instance except where the primary inflammation was the result of gonorrhœa. If my observations are correct they would prove that the connective tissue never regains its integrity after having been once inflamed. If the surrounding tissue has restored the loss the part will return to its normal condition. If the loss can not be replaced, nature can only repair the injury by a process of adhesive inflammation of the parts involved.

I have used the term thickening of the broad ligament, but I have not meant to imply that there is a deposit of lymph between the layers of the broad ligament. The enlargement is I think due to the dilated state of the veins. The condition is one easily aroused to activity.

It is still a moot question as to the way in which the tube has become involved where gonorrhœa is not the cause of the inflammation. In septic poisoning after surgical injuries, I believe that the connective tissue of the veins and lymphatics first become involved and that the inflammation of the peritoneum is secondary. There is no evidence to prove that the inflammation passes into the uterine canal and thence to the tubes, except in such cases where the process is due to gonorrhœa.

The prognosis as to the result to be gained by local treatment is doubtful in those cases due to gonorrhœa, in those cases where the pelvic inflammation is of long standing without reference to the cause and in those with a history of frequently recurring attacks. In cases which can secure every attention, a cure by local treatment can sometimes be effected, but a long time is required. In cases which have to gain their own living, we may seriously consider the advisability of an operation after having gained the consent of the patient after a true representation of the operation and its results. We should enter a protest and the profession should demand a recognition of the responsibility of those who are indiscriminately operating for the removal of tubes and ovaries. It requires an expert to determine when the operation is necessary, and still more experience and skill to do it with safety to the patient. It should only be done as a last resort after other measures have failed. In a number of cases in private practice I have succeeded in restoring the patient to health by local treatment, for whom the operation had been strongly urged. If we could get accurate statistics I think that it would be shown that the average amount of benefit gained does not compensate for the amount of risk. I believe that the operation is done too often even by those who have the least death-rate. I predict that five years will not pass before it will be almost necessary to offer an apology when this operation is proposed.

Dr. Robert Battey, of Rome, Ga.: From my experience it has seemed to me that the pelvic cellulitis which gives so much trouble was in a large proportion of these cases secondary. So far as disease affecting the tubes is concerned, I believe that if we throw out of consideration gonorrhœal cases, the primary disease starts in the ovary. I regard most of these serious inflammations of the pelvic cellular tissue as dependent upon cystic or cirrhotic disease of the ovary. With reference to the frequency with which this operation is done, I must confess that I am largely in sympathy with the speaker. I think that the operation is done too often. I do not believe that every case of organic disease of the ovary requires operation.

In reply to a question of Dr. Fordyce Barker asking him to state the grounds on which he would advise removal of the tubes and ovaries, Dr. Battey said, that every case must be determined for itself. If I had a poor miserable patient without the means of comfortable subsistence, suffering with ovarian or tubular disease, I would operate. If I could put such a patient under suitable surroundings and under a prolonged course of treatment, I might not think of the knife, but we have to look at the cases as they exist. I do not require in my cases an absolute diagnosis of disease of the tubes or ovaries prior to operation. It is sufficient for me to know that the general health is broken down by reason of the perverted function of her ovaries, that she is utterly miserable, that there is no reasonable hope of restoration to health by other means and that there is a reasonable prospect of restoration by removal of the ovaries. Under such circumstances I unhesitatingly operate and contrary to my former view, I do find that the ovaries are diseased.

Dr. R. Stansbury Sutton: I believe that when the ovary is diseased and can not be cured by ordinary means, when it is interfering with the health of the woman and her duties in life, it should be removed. If the ovary is diseased and is a burden to the woman, it is as much the duty of the surgeon to remove that ovary as it is to remove a diseased eyeball. I agree that the operation is being done too often; not, however by competent men, but by incompetent men. The conditions which require the operation are not always clearly understood before the abdomen is opened. I do not believe that a man is compelled to be positively certain of what he is going to find before operating. The speaker then presented several specimens and described the cases from which they were removed.

Dr. T. C. Busey, of Washington: I think that if pathologists will return to the histological basis, there will not be the difference of opinions which now exists. I believe that it is now held that the cellular tissue is really a vast lymphatic stricture and that the peritoneum is a large lymphatic sac. Instead of discussing nice distinctions between pelvic cellulitis and pelvic peritonitis, it would be better to classify as pelvic lympangitis, these different varieties.

Dr. J. Scott: I might mention some of the cases bearing upon this point which I have seen. One was a patient supposed to have fibroid tumors. The ab-

domen was opened and both ovaries found to contain pus. They were removed and patient recovered. In a second case the patient presented a tumor in the right side. The temperature record was kept for two months, during which time it did not vary half a degree. On opening the abdomen, the ovary was found to contain ten ounces of pus. The right ovary was removed, but the left appeared to be healthy and was left in position. During the operation the bladder was opened. This was sutured and the patient made a good recovery. Five weeks later the patient complained of pain in the left side and on examination, I found an enlarged left ovary. This was removed and the patient promptly recovered. In a somewhat similar case, one ovary was removed. In a short time the other enlarged, but the operation was postponed and the woman died of rupture of the abscess.

DR. MATTHEW D. MANN, of Buffalo: I wish to allude to the possibility of one tube and ovary being diseased without involvement of the other. There is no reason why it should be so. I have in several cases where the disease appeared to be limited to one side, removed but one ovary and the result has been a perfect cure. This operation avoids some of the objections urged against the removal of both ovaries.

DR. H. P. C. WILSON: I believe that where there is a general cellulitis, there is more or less pelvic peritonitis. These two affections are often associated. In the early stages, the inflammation is often controlled by active treatment. If it is not controlled, it may go on to the formation of abscess. The pus may be discharged and the patient recover. Occasionally the abscess occurs in the tube or ovary and these are the cases in which laparotomy is often called for. I agree that the operation is done too frequently. The point which Dr. Mann has raised that it is not always necessary to remove both ovaries is a very important one.

DR. JOHN C. REEVE, of Dayton, Ohio, reported a

CASE OF ABDOMINAL SECTION FOR CHRONIC SUPERATIVE PERITONITIS.

A. D., aged 19, living as if married, was healthy until November last. She had never been pregnant. She was attended by a physician who found abdominal inflammation. On January 18th, she was seen in consultation by the speaker, at which time she presented the evidences of chronic peritonitis, but no history of a gonorrhœal origin could be obtained. One month later she began to pass pus by the rectum. After other measures of relief had failed, laparotomy was offered in April, but declined. The patient was not seen again until June 20th, when she desired the operation, as she had suffered with hectic. The menstruation had ceased since January and examination of the urine showed no albumen. There was great tenderness and hardness all over the abdomen, pus being still passed with the stools. By vaginal examination, no definite hardness could be detected. By the rectum there was ill-defined resonance high up on the left side. No opening into the rectum could be detected, although frequent examinations for this purpose were made. The patient was greatly emaciated, the weight having fallen from 125 pounds to seventy pounds.

The operation was performed June 23, there was great difficulty in the administration of the ether. On opening the peritoneum, all the parts were matted together. The abdomen was washed out by allowing water to run into it from a pipe and then syringing out what remained. Finally a cavity was reached in the left lumbar region. It was impossible to attach the walls of this cavity to the abdominal wound and as the condition of the patient was by this time alarming, a drainage tube was introduced and the abdominal incision closed with sutures. In the course of several hours, the patient gradually rallied from the operation. The temperature did not go above 100. The cavity was washed out with a solution of iodine in tincture in water. The upper two-thirds of the abdominal wound failed to unite. On the fourteenth day a large quantity of fecal matter came through the wound. This has continued to recur. In July, evidences of Bright's disease were detected. Since then there has been some improvement in the general health. I think that if the patient had consented to the operation when first proposed, the result might have been different. One of the principal objects of the paper has been to ascertain if, as has been stated, fecal fistula is an invariable consequence of laparotomy for abdominal inflammation in cases where pus has already escaped by the rectum.

DR. J. SCOTT: I would mention the following case: A patient was admitted to the hospital with prolapse, inflammation of the ovaries and cellulitis. After three months' treatment without improvement, removal of the ovaries was recommended, but declined by the patient. The patient was kept under treatment for six months longer, when enlargement of the right ovary began. Later pus discharged by the rectum and subsequently the abscess opened into the bladder. The patient then consented to operation. The abdomen was opened, an opening made into the vagina and a drainage tube introduced. The improvement was not marked and in the course of two months the patient was as bad as ever. The removal of both ovaries and tubes was then performed. Four or five days after the operation fæces appeared in the wound. During the five months succeeding the operation, the fecal fistula has closed, the patient has gained ten pounds and is able to walk about.

DR. WILLIAM GOODELL, of Philadelphia: The only case which I have had at all similar to the one reported was one of pelvic abscess opening into the rectum and bladder. I performed laparotomy with the intention of opening the abscess and stitching its walls to the abdominal wound. The abscess had been so constantly drained, that it was not larger than a pear. By compressing the abscess sac, I was able to make it prominent in the vagina, and forced into it a closed pair of scissors, which were then opened and the opening gradually enlarged, and a drainage tube inserted. This case gradually recovered, both the rectal and vesical openings closing in the course of time.

Dr. C. C. Lee, of New York: I think that the rule will come to be established that in chronic suppurative peritonitis, laparatomy is not only justified, but the procedure to be adopted.

Dr. R. S. Sutton: In a case of pelvic abscess as large as a cocoanut, I performed laparatomy and then stitched the peritoneum at the edge of the incision to the peritoneum covering the abscess, which was then opened and a drainage tube introduced. The patient recovered.

Dr. J. Taber Johnson, of Washington: I would suggest that in such cases as the one described by the author, where time is a matter of importance, much can be gained by adopting the procedure employed by Drs. Bantock and Tait. In washing out the abdominal cavity they pour the water into the cavity with a pitcher, using gallons at a time. In this way the cleansing is rapidly accomplished.

Wednesday, September 22, Second Day.

Morning Session.

Dr. John Goodman, of Louisville, Ky., read through the Secretary, a paper on

ERGOT AFTER LABOR.

The administration of a full dose of ergot immediately after the completion of labor has become a general practice. It is claimed that it promotes involution, prevents after pains and tends to prevent post-partum hæmorrhage. Some years ago the author administered a full dose of ergot after a perfectly normal labor. In fifteen minutes, severe pain appeared and increased. The tenderness in the uterus continued for a week. There was no milk and the patient, previously prolific, never again conceived. The trouble was attributed to inflammation of the muscular coat of the uterus produced by the action of the ergot. In a second case treated in May, 1886, ergot was given after a forceps delivery. On the seventh day the patient had a chill followed by a temperature of 104. The next day a clot was washed out of the uterus and the temperature fell to 99. Well marked septicæmia developed and the patient died one week later. In this case the retention of the clot was attributed to the spasmodic contraction of the uterus preventing its escape. The author had seen other cases in which injurious effects were produced by the administration of ergot.

Dr. Goodman claimed that ergot did not assist involution, which was a natural process and required a certain length of time for its completion. That we have in ergot a remedy capable of arresting after-pains, can not be doubted, but it does so by exciting a mode of muscular action at variance with all physiological laws. After-pains are conservative and it is better to wait until they become of abnormal severity before resorting to treatment. Ergot is capable of preventing hæmorrhage, but its use is attended with such dangers that it should not be employed except under exceptional circumstances. It should be an inviolable rule not to give ergot at the close of the third stage of labor, unless hæmorrhage is imminent. It should then be used by hypodermic injection.

The President: I have in process of preparation a paper in which I enter my protest against routine practice of the administration of ergot after the third stage of labor. This conclusion is based upon my experience and upon a study of the action which is claimed for the drug. The contractions produced by ergot are unlike those of nature. The contraction of ergot is persistent, while the normal contraction is intermittent. If the contraction is persistent, the circulation of the uterine wall can not reach a healthy state, and thus the process of it not only retains what is in the uterine cavity, but it interferes with the process of involution and lays the foundation for sepsis and inflammation. I think that in the course of the next five or ten years, the practice of obstetricians in this matter will be revolutionized.

Dr. William Goodell: The author of the paper states that it is only since last May that he has given up the use of ergot. I think that he has not had sufficient time to form such positive opinions. In the first case, I think that there must have been a fibroid tumor. The second case was a clear instance of septicæmia. I do not think that after-pains are conservative, as a rule we do not see them in primipara. These pains are in a great measure the result of weakness induced by civilization. I do not believe that every woman who has given birth to a child needs ergot, but we do not know the cases which do require it. In twenty-five hundred cases of labor, I have always given ergot after the completion of labor and I have never seen any harm from its use. I do not believe that one dose of ergot has much effect in favoring involution. Involution is the result of fatty degeneration, and the greater the contraction, the greater the interference with the circulation the more rapidly should this change take place. I have used ergot for two purposes, one was to prevent hæmorrhage and the other to prevent the absorption of septic matter. Since the introduction of antiseptics, which I think should be used in every case of labor whether public or private, the use of ergot to prevent septic infection is not so important. I think that it does not do the harm which has been mentioned.

Dr. George J. Engelmann: I hold in the main the views which the President has expressed. I use ergot much less than I did a few years ago. I believe that we have equally effective measures in the hot antiseptic douche and in the faradaic current. After the contents of the uterus have been expelled ergot will in certain cases always be a useful and effective remedy. I would not venture to say that after labor ergot is out of place, but I think that I may say that before the contents of the uterus are expelled, it should not be used at all.

Dr. Theophilus Parvin, of Philadelphia: The effect of ergot varies with the dose. A small dose acts simply to increase the normal uterine contractions. I must object to the assertion that ergot should never be given before the completion of labor. Statistics show that those who are most successful in the treatment of placenta prævia are the men who use ergot. Again, in a multipara with the os dilated,

where a sudden rupture of the membranes has taken place with a cessation of labor, 15 or 20 grains of ergot causes a rapid completion of the labor. After a protracted labor, there is a weariness of the uterus and a failure to enter upon the normal retraction which is a preventive of hæmorrhage and tends to promote involution. As long as in the third stage of labor we assist nature in the expulsion of the placenta, why should we not assist nature in securing normal retraction of the uterus after the completion of the third stage. In some experiments which I made at the Philadelphia Hospital, to determine the rapidity of involution of the uterus in women who had received ergot and in those who had not, it was found that in those who received ergot after delivery, uterine involution seemed to take place more rapidly.

DR ALEXANDER J. C. SKENE, of Brooklyn: I do not think that in the cases reported, the ergot had anything to do with the production of the effects. All rational men use ergot as any other remedy, when it is necessary or may possibly become necessary. If there is any doubt whether or not it is needed, it is better to give the patient the benefit of the doubt.

DR. P. C. WILLIAMS, of Baltimore: I have never yet regretted the use of ergot in any case, but I have regretted not using it. The great danger under the use of anæsthetics is hæmorrhage. To avoid this the use of ergot seems to be the proper thing. I admit that ergot is abused, but the abuse of ergot is no argument against its proper use.

THE PRESIDENT: The profession is not taught that ergot should be given in diseased conditions, but that it shall be given in all cases after labor as a routine practice, and it is only against this use of it that I raise my voice.

DR. THADDEUS A. REAMY, of Cincinnati, then delivered

THE PRESIDENT'S ADDRESS.

He first referred to the prosperity of the Society during the past ten years, and spoke of the great advance of abdominal surgery and ovariotomy during the same time. The speaker thought that the less satisfactory results obtained in America as compared with other countries might be due to climatic and constitutional conditions and to the fact that the operation was performed by too many operators. The operation of removal of the ovaries for beginning cystic troubles and for other conditions is performed in many cases which could be relieved by other and less serious measures. The practice of leaving the undiseased ovary was recommended. The success of ovariotomy has led to the performance of laparotomy in other conditions, as suppurative peritonitis, with satisfactory results.

The use of electricity as a therapeutic agent is attracting much attention. It is the safest and most effective remedy in extra-uterine pregnancy, and it is coming into use in many other conditions.

The treatment of extensive fibroid disease was next taken up. Medical treatment is, in the main, unsatisfactory, although in some cases, good results have followed the use of ergot and electricity, especially the latter, which is perhaps the most effective therapeutic agent in these cases. The operation of hysterectomy should not, as a rule, be performed in these cases. Spaying has met with more favor and success than any other surgical procedure. There are a few cases where on account of the large size of the tumor or its fibro-cystic character, hysterectomy probably affords the best hope.

Pelvic deformities as influencing labor were next considered. In the lesser degrees, premature labor, with the use of appropriate forceps applied with proper skill were recommended. With reference to operative procedures, the mortality in the United States has been very great. An important reason for this is the failure to recognize the importance of early interference. It has also been shown that, other things being equal, the danger is increased by doing the operation after the death of the child.

Total extirpation of the uterus for cancer has been steadily growing in favor. So far as the speaker had examined the clinical proof the evidence as to its utility had not been convincing. While patients have recovered from the operation, it is not yet proven that the operation is justifiable, except where the disease is confined to the body of the uterus or the cervix and the vagina is free. While the view that epithelioma of the cervix is due to traumatism is not generally accepted, he believed that traumatism of the cervix was conducive to the development of epithelioma. If for no other reason, Emmet's operation is warranted on the sole ground of a preventive.

The speaker in referring to the *uterine curette* stated that he had recently had alarming symptoms following its use, and in one case where the instrument was used immediately after dilatation with sponge tents, death resulted. Peritonitis had not been developed in a single case where the dilatation had not immediately preceded the operation. Rapid dilatation is alleged to be comparatively free from the dangers attendant upon the use of tents, but he has recently had a high degree of peritonitis following dilatation by this method where the curette was not used.

The following case was then described: A married woman aged 32, the mother of two children, had suffered with severe menorrhagia during the past year. There was an old laceration of the perineum, but no laceration of the cervix. The uterus measured 3¼ inches and was not tender. No pelvic tenderness could be detected. Treatment directed to the general condition was ordered, and under it the anæmia improved and menorrhagia decreased. Some months later the blunt curette was used with the woman in the lithotomy position. No dilatation was required. A large amount of the fungous tissue was removed from the posterior wall and the curette was then passed over the anterior wall. During the manipulation, no roughness being employed, the instrument passed through the uterine wall. It was at once withdrawn, and a sound being introduced, it readily passed its whole length and its extremity could be felt externally above the umbilicus. Forty drops of laudanum was administered by the rectum and an ice bag was placed over the abdomen. The ice bag was kept on continually for five days. The

accident caused no symptoms whatever. The perineum was subsequently restored and the woman's health is much improved. The menorrhagia has disappeared.

In concluding the President referred to the proposition looking to the organization of a Congress of American Physicians and Surgeons, and hoped that the action of the Society would be favorable to such an alliance.

Dr. Fordyce Barker, of New York, read a paper on

THE INFLUENCE OF MENTAL INPRESSIONS ON THE FŒTUS.

The belief that maternal impressions may affect the nutrition and development of the fœtus *in utero* has existed from the earliest periods of which there are any records. Medical writers with hardly an exception down to the beginning of the eighteenth century, express the belief with more or less distinctness that fœtal marks and deformities are due to the emotions, desires or shocks of the pregnant mother. Reference was then made to numerous papers written within the past twenty years in which this theory was strongly controverted. Those who disbelieve in this doctrine base their skepticism on what they regard as physiological reasoning, and chiefly on the assertion that there is no direct nerve connection between the maternal and fœtal systems. Deformities, they urge, are due to arrest of development; but no one has brought forward sound physiological reasons why this arrest of develoyment may not have been caused by mental impressions affecting the fœtal nutrition by their influence on the maternal blood. Extremely rare as is the occurrence of cases which prove the result of this influence, he considered the fact is so well proved by sufficient authentic evidence as to make it as certain as any other fact which cannot be explained by science. The term "mental impressions" should include those which have a physical as well as a psychical origin. Five cases coming under the author's observation were described.

Case 1 was that of a young lady who at the age of 18 had for the first time been taken to the theatre and had seen Sothern, the actor, play "Lord Dundreary." From this time she spent her whole time in writing to Lord Dundreary and she thought and talked of nothing else. This continued for several months, and under treatment and change of scene, gradually wore away. She subsequently married, and four years after her attack of insanity, her first child, a boy, was born. As the child became able to talk he exhibited peculiarities resembling those of Lord Dundreary. He walked with a little skip, had a slight stammer in his speech, and his left brow was drawn down with the lids practically closed.

Case 2 was that of a lady, a typical brunette, who was first married to a gentleman, a typical blonde. She was never pregnant by him. Subsequent to his death she married a gentleman as marked a brunette as herself. Her first child was a decided blonde. Both her own and her husband's relatives are all brunettes. The lady has since had three children, all brunettes.

Case 3 was that of a lady who during the first month of pregnancy had been much worried over her oldest daughter, who had had her ears bored for rings. The ears became inflamed and caused much trouble. When the child was born, both ears presented the appearance of having been pierced for rings, and through at least one of the lobes, a thread could be passed.

Case 4 was that of a lady who at a very early period of pregnancy was much impressed by seeing three ladies, all of whom had hare-lips. When her child was born it had a double hare lip.

Case 5. Mrs. X., married but a few weeks, was at the theatre with her husband. Something vexing him, he placed the point of his elbow on her hand and held it so firmly that she could not draw it away. Not wishing to make a scene, she bore it until she fainted. The fingers were much swollen and painful for several days. She never lived with her husband afterward. Thirty-five weeks and three days after the theatre incident, she gave birth to a son. On the left hand, the first and second phalanges of all the fingers and thumb were absent, looking as if they had been amputated. During her pregnancy, she had never thought that her child would be born with any deficiency.

Dr. Wm. Goodell: I have been very skeptical on this subject, but I have seen one case which seems to bear out the theory. A physician was called upon to assist at the operation of circumcision. His wife, who was in the early months of pregnancy, was much interested in the operation and insisted upon having all the details. The operation occupied much of her thoughts. When her child was born, a boy, it was found that the glans was exposed, the prepuce well retracted with granulation edges, showing an appearance very similar to that of a recent circumcision. I have recently seen an almost identical condition in a child, which could not be accounted for by any impression on the mind of the mother.

Dr. Samuel C. Busey: While I have no positive convictions to present, I believe that there is some relation between mental impressions and fœtal deformities. Any prevalent and concurrent belief must be based upon an element of truth. This belief has prevailed since the time of Jacob. In the physical world there is no effect without a cause and in the world of life the rule is the same. If we can demonstrate in any single instance connection between the deformity and the mental impression, we must concede that such a thing can again occur. Dr. Barker has cited some instances and Dr. Goodell has given another case. In still another case the mother while pregnant saw a man with an opening in his trachea from which a tracheotomy tube had been removed. The child when born exhibited a depression in the same position. Another case is reported where the mother received two distinct impressions and the child was born with two distinct deformities corresponding to the separate impressions received. In another case, the father had removed, in the presence of the mother, a metacarpal bone of one of the fingers. When the child was born it exhibited a corresponding deformity. A consideration of these

cases can bring us to but one conclusion. The earlier in pregnancy the impression occurs the more frequently does the deformity follow and the greater is the correspondence between cause and effect.

The discussion was then postponed until the afternoon session.

AFTERNOON SESSION.

DR. FORDYCE BARKER, of New York: In all the cases I have reported there is no evidence that the period since conception had been more than six weeks. I have rejected all cases in which conception occurred three or four months before the mental impression was produced.

DR. JOHN BYRNE, of Brooklyn, read a paper on

THE TREATMENT OF PROCIDENTIA UTERI BY GALVANO-CAUTERY.

In February, 1872, Mrs. H., the mother of four children, presented herself with the entire womb and vesico-vaginal wall protruding. She was 35 years of age. The cervix was ulcerated from the friction. She was treated by applications of glycerole of tannin and irrigation for two months. The cervix was then removed with the galvano-cautery loop. The patient recovered without a symptom. Five weeks later, there was no bulging of the vesico-vaginal septum and the uterus could just be reached with the finger. No reasonable amount of force by means of a vulsella forceps could draw it down. The patient was discharged cured and has continued well.

The whole number of cases treated with the galvano-cautery has been nine, but in three only has the cervix been removed. In six of the cases, linear cauterizations were required.

Case 2 was a patient with procidentia who had been treated with pessaries for a long time. The cervix appeared to be healthy. A double tenaculum was introduced into the cervical canal and the whole mass pushed into the pelvic cavity and lifted to show the line of vaginal insertion. A groove sufficiently deep to admit the loop was then cut around the cervix close to the vaginal vault. The hot loop was then adjusted and the cervix cut through to the depth of one-fourth of an inch. The wire was then removed and tampons of glycerole of tannin inserted. Two weeks after operation, the uterus resisted all reasonable efforts to depress it. Two years after operation no perceptible change was observed. The health had never been better and menstruation was regular.

In *Case 3* the parts were returned and the line of vaginal insertion marked in spots with the cautery knife. The entire mass was then drawn down and a deep fissure three-eighths of an inch in depth made along the circumference of the cervix. Then three incisions were made in the vagina, one central and the others diverging, and the whole mass was then returned. The recovery was complete. In none of the cases has there been any peritonitis of any account. The speaker highly recommended further trial of the galvano-cautery in these cases.

DR. GEORGE J. ENGELMANN, of St. Louis, read a paper on

ELECTRICITY IN GYNÆCOLOGICAL PRACTICE.

After referring to the confusion which had surrounded this subject he referred to the following points which should govern the use of electricity as a therapeutic agent: The formation of strict indications for the use of the galvanic and faradic currents, a differentiation between the varying forms and modifications of the galvanic and faradic currents, differentiation between the active and indifferent poles, the localization and concentration of the current, the precision of the dose, the use of stronger currents continued for a short time. He has used the galvanic or faradic current in the reduction of the size of neoplasms, fibrous polypi, cystic growths and urethral caruncles; also in chronic pelvic inflammation, in chronic ovarian inflammation, in stenosis of the os, for the relief of the engorgement accompanying subinvolution, in prolapse when due to relaxation of the tissues. It is an aid in the correction of various forms of displacement, in metrorrhagia when due to inflammation and relaxation, in certain forms of amenorrhœa and for the relief of many annoying reflex symptoms. In obstetrics it is useful in uterine inertia during or after labor, in cases of weak and irregular labor pains, in post-partum hæmorrhage, in delayed involution, in paralysis of the urethra or bladder after labor and in the interruption of extra-uterine pregnancy.

The only contraindication to the use of electricity is the presence of severe acute inflammation. It may be used in sub-acute inflammation. In the more acute pelvic inflammations care is required in its use.

A number of cases were then referred to showing the beneficial effect of electricity in diminishing the size of fibroid tumors and in other conditions.

At the business meeting the following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. A. J. C. Skene, of Brooklyn.

Vice-Presidents—Dr. John C. Reeve, of Dayton, O., and Dr. Elwood Wilson, of Philadelphia.

Secretary—Dr. Joseph Taber Johnson, of Washington.

Treasurer—Dr. Matthew D. Mann, of Buffalo.

Council, additional members of—Drs. W. H. Baker, of Boston, C. C. Lee, of New York, T. M. Drysdale, of Philadelphia, and A. Reeves Jackson, of Chicago.

NEW MEMBERS.

Drs. Charles M. Green, of Boston, A. F. A. King, of Washington, E. C. Dudley, of Chicago, A. W. Johnstone, of Danville, Ky., J. E. Janvrin, of New York, H. Marion Sims, of New York, B. F. Baer, of Philadelphia, and W. Gill Wylie, of New York.

It was decided to hold the next meeting in New York, beginning September 15, 1887.

A communication with reference to the organization of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was presented.

DR. JOHN C. REEVE, of Dayton, O., offered the following:

Resolved, That this Society expresses an opinion favorable to the formation of the proposed Congress, but that the committee be instructed not to favor any plan looking towards a surrendering of its distinctive title, character, or to interfere with the full and entire management of its own affairs in every respect.

The following amendments were offered and accepted:

1. That this Society does not favor meetings of the Congress oftener than biennually.

2. That the committee opposes, as far as possible, meetings in the month of June.

Resolution, as amended, adopted.

The committee consists of Drs. Samuel C. Busey, of Washington, Fordyce Barker, of New York, T. A. Emmet, of New York, J. R. Chadwick, of Boston, and Joseph Taber Johnson, of Washington.

Thursday—Third Day.

Morning Session.

Dr. W. H. Baker, of Boston, read a paper on

Electrolysis in Gynæcological Surgery.

The speaker referred more particularly to the use of electrolysis in cases of fibroid tumor. He laid down the following rules for the performance of the operation: It should not be employed within a week before or after menstruation; an anæsthetic should be administered; it is better to use electrolytic needles for both the positive and negative poles; the operator should be absolutely sure of the cleanliness of his needles; the needle should be deeply buried in the tumor in order that the current shall be insulated from the parts outside of the growth; the insertion of the needle should be made at the most prominent part of the growth, whether that is in the vagina or in the abdominal wall; the needles should not be too nearly approximated; if both needles are properly placed the position of the two poles makes no difference; the circuit being completed, the number of cells should be gradually increased from four to twenty or thirty (a more exact means of determining the strength of the current would be the galvanometer, but this had not given him accurate results); the length of time during which the application is continued should be from ten to twenty minutes, and should be determined by the character of the pulse; when the pulse becomes slower and weaker than normal the number of cells should be diminished or the current discontinued; the current should be diminished gradually, and the wires should be disconnected at the battery before the needles are removed; the application should not be made at the surgeon's office; after the application the patient is to be put to bed, where she is to remain for one week.

With such precautions, the speaker had never seen shock after the operation. A single treatment is often all that is necessary. He had never found it necessary to make more than three applications, and the latter number in only one case. There should be an interval of at least from one to three months between each application.

The use of electrolysis is also of service in the treatment of inflammatory effusions. Before resorting to electrolytic puncture the application of the galvanic current should be tried, as it does not require an anæsthetic, and avoids the slight risk which accompanies even small wounds.

The author presented the following conclusions:

1. Electrolysis is a useful agent in the treatment of certain cases of fibroid tumors of the uterine walls and of chronic circumscribed peri-uterine effusion.

2. When applied to fibroid tumors of the uterus, electro-puncture is a most reasonable and efficient method.

3. In the treatment of fibroid tumors by this agency, it is unnecessary to apply it often.

4. Cases of perimetric effusion to be treated by this method should be selected with care, in reference to the absence of all acute symptoms.

Dr. Jas. R. Chadwick, of Boston: I tried electrolysis in one case of fibroid tumor, introducing the needle through the abdominal wall. This caused a smart attack of peritonitis. During the following year there was no decrease in the size of the tumor.

Dr. Geo. J. Engelmann: By puncturing through the vagina and if possible through the tissue of the uterus we avoid the dangers of inflammation which accompany abdominal puncture. I believe that the same results can be accomplished without anæsthesia and with less danger by one electrode in the tissue and concentrating the total effect upon that electrode, by using a large electrode in connection with the other pole.

Dr. James B. Hunter, of New York: My experience with this method of treatment has been limited, but I can not say that I have seen one case of fibroid tumor permanently relieved by electrolysis.

Dr. Matthew D. Mann, of Buffalo: I have employed this agent in one case, plunging one needle into the tumor from behind through Douglas's cul-de-sac, with a sponge electrode over the tumor on the outside. The current was kept up fifteen minutes. Six applications were employed. The size of the tumor much diminished and the tenderness and pain were lessened. The patient is now able to attend to her duties.

Dr. James B. Hunter, of New York, read a paper on

Persistent Pain after Abdominal Section.

Pain before operation may be due to various causes. It may be located in the ovaries, when it will be increased by menstruation. Disease of the tubes is a cause of pain in a large number of cases. The pain of peritonitis is of great importance. Acute peritonitis may be limited to the region of the ovaries and tubes, and the pain caused by it may be periodical in character. The presence of adhesions interfering with the mobility of the intestines and other organs is a frequent cause of pain. A severe form of pain may also be caused by displacements of the uterus.

Abdominal section is performed for the relief of pain, and the organ at fault is successfully removed and the patient recovers, but the pain continues. If

there is no marked relief at the expiration of twelve to eighteen months, if the patient has been favorably situated, the operation may be pronounced a failure so far as the patient is concerned. Such pain may be due to former peritonitis, to peritonitis following the operation, or to some defect in the abdominal wall. Peritonitis following the operation is a cause of pain in a certain number of instances. A slight amount of peritonitis often occurs after abdominal section, and it may leave some slight adhesions interfering with the mobility of the viscera. Inflammation in the region of the stump often causes its attachment to the abdominal wall and thus cause pain. Pain may result from defective union of the abdominal incision, allowing a ventral hernia. Pain in the cicatrix may occur, as in other situations.

In the way of prophylaxis, the utmost precaution should be taken to prevent the development of peritonitis. Antiseptic precautions should be adopted. The stump should be tied with aseptic silk. The early and judicious use of drainage and irrigation will go far toward preventing inflammation. The cold coil with antipyrin should be resorted to if there are any indications of peritonitis.

In the treatment of the pain, blisters, vaginal injections and the use of iodine may be resorted to. The internal use of opium is usually demanded. Such treatment can, however, scarcely be expected to cure the pain. Rest in the horizontal position is perhaps better than any medicine. If all palliative measures have been tried, and at the end of twelve or eighteen months there is no improvement, a second operation may be warranted. The dangers of operative procedure and the uncertainty of the operation causing any improvement, must be stated to the patient.

The following conclusions were drawn:

1. All cases of abdominal section done for the relief of pain should be carefully followed up for at least two years, and not counted as cured simply because the operation has not been fatal.

2. Peritonitis following operation is to be dreaded as much for its remote consequences as for its immediate danger.

3. Extreme caution is demanded when the operation is undertaken where there exist the physical signs of chronic peritonitis.

4. Secondary operations, as a rule, are of no value, although occasionally they may afford relief.

5. Where the operation is done for the relief of pain, a guarded prognosis should be given. There are certain chances that a perfect cure will not result, even if the operation itself is entirely successful.

DR. A. J. C. SKENE: Among the causes of pain after laparotomy I would place the ligature. In tying the pedicle after removal of the ovaries, some traction must be made upon the broad ligament and the nerves must be drawn upon. That form of pain may disappear. Another cause of pain is the application of the ligature just tight enough to arrest hæmorrhage without destroying the nerves. I think that we have more pain after the use of the ligature than after the use of the cautery clamp. The cautery as a means of treating the pedicle has never been thoroughly tried in this country.

In regard to what constitutes success after abdominal section, I would say that many of the cases which I have reported as failures have subsequently turned out to be most successful.

DR. W. GILL WYLIE, of New York: With reference to peritonitis, I would say that I regard it as a condition behind which there is some disease. In chronic peritonitis, there is often some cause which keeps renewing the inflammation. In many of the cases that suffer after operation, the pain is due to imperfect operation. Sometimes a small portion of diseased tissue is left. I have taken the precaution to destroy the diseased tissue that may be left beyond the ligature, either by carbolic acid or preferably by Paquelin's cautery. This has lessened the mild attacks of peritonitis. Sometimes the inflammation is centered around a ligature, leading to abscess and the formation of a sinus. In some of these cases the trouble can be cured by dilating the sinus and fishing out the ligature. In many cases the peritonitis is due to the bursting of a small cyst. Again, in cases where there is chronic inflammation of the lining membrane of the uterus this is not always cured by removal of the tubes and ovaries. This may cause pain not only in the uterus, but reflexly in other parts of the body. These pains can often be cured by dilating the uterus and applying carbolic acid.

DR. ROBERT BATTEY, of Georgia: I have had some little experience with the difficulties alluded to by Dr. Hunter. We are all familiar with the neurotic women. As a result of a carious tooth, an intense neuralgia may be set up which may continue for years and not be relieved by the removal of the diseased tooth. This is probably due in an alteration in the nerve tissue itself. The explanation that these pains persisting after abdominal section were due to inflammation and adhesions has been carefully considered by myself, but I have wholly failed to find a satisfactory explanation in this quarter.

The speaker has said that at the end of twelve or eighteen months, we should give up these cases as failures: I would qualify that statement by more than doubling the limit. Some of the cases which were most unsatisfactory at the end of a year have achieved the most gratifying cure by the lapse of time. Among the causes which produce the neurotic condition, I am inclined to rank in the first place, an acquired neurotic habit from long suffering. In looking for causes, I have been much struck by one point, that alluded to by Dr. Skene—that is the use of the ligature, and especially a rather loosely tied ligature. Dr. Skene suggests the use of the cautery and clamp. I formerly used a method which has not been alluded to, and that is the separation of the ovary from its attachments by the écraseur. In these cases I did not have any of these troublesome neuroses, and there was no hæmorrhage. I have seriously been considering a return to this method of treatment.

With regard to treatment by a second opening of the abdomen, I would call attention to the fact that by a simple opening of the abdomen, purely for diagnostic purposes, unaccompanied by any great disturbance of the parts, the condition of the patient is often greatly improved, especially as regards pain.

I think that after removal of the ovaries and tubes, the uterine trouble will get well, but the cure may be hastened by applications to the interior of the uterus of a solution of iodine in carbolic acid.

Dr. H. P. C. Wilson, of Baltimore: I am satisfied that while cases do occur where the pain after laparotomy continues as a result of local adhesions, yet the majority of cases belong to the class of cases described by Dr. Battey where the condition is due more to the neurotic element than to the operation. Most of these are long standing cases where the mental condition has become so morbid that the patient is almost insane on the subject of her ovaries and tubes. Even if these organs are removed, the neurotic condition may remain for a long time. Where the woman has to work and has not time to think of herself, these pains more rapidly disappear than where she is pampered with every luxury. Nothing is so good for the relief of these pains as exercise by walking.

Dr. James B. Hunter: The neurotic condition has been referred to, but I think this is secondary. As regards chronic metritis, I think that usually after removal of the ovaries nothing more is required. I am willing to admit that my limit was too short and should be extended to two or three years. I think that it is not well to expect any improvement after removal of the ovaries and tubes for at least twelve months. I think that it takes that long for the system to become accustomed to the changed condition.

Dr. James R. Chadwick read a paper entitled

THE BLUE DISCOLORATIONS OF THE VAGINAL ENTRANCE AS A DIAGNOSTIC SIGN OF PREGNANCY.

The speaker had tables of 440 cases examined. He had divided the discolorations into four groups: first, doubtful, where it was so faint that he could not be certain of its presence; second, suggestive, where it was more marked; third, characteristic, where the discoloration, though faint, is confined to the anterior wall of the vagina and more particularly to the urethra, just below the meatus and on either side of the meatus. In every instance where this was present the woman was pregnant with one exception; and fourth, marked, where the congestion has become deep and exhibits the appearance constantly seen during pregnancy. He did not claim that the characteristic discoloration is seen in every case, but if carefully looked for, it would be found quite pronounced in the majority of cases. The color varies from a violet to a dark, dusky, almost black color. When present, this sign is of decided value in the early months of pregnancy, but its absence should not be accepted as a positive proof against pregnancy. Cases were cited in which the discoloration had been observed in the seventh or eighth week of pregnancy.

Dr. H. P. C. Wilson: I consider this one of the most valuable means of diagnosing pregnancy in the early stages. It is invaluable in cases where women wish to deceive you.

Dr. A. J. C. Skene: This has seemed to me to be a most reliable sign in the early months of pregnancy. I believe that it is an illustration of the physiological hyperæmia of the formative stage of development.

Dr. Joseph Taber Johnson: Some years ago, I referred to this point, and the discussion which followed seemed to indicate that the discoloration was a congestion produced by interference with the return of the venous circulation by the pressure of the enlarged uterus. It was held that the same discoloration could be produced by any other tumor which would have the same effect as the pregnant uterus.

Dr. William H. Parrish: In regard to the continuance of the discoloration after labor, I have noted that in primiparæ where involution of the vagina takes place completely, the discoloration disappears with corresponding rapidity. Where there is subinvolution, the blueness may continue for a longer time. In multiparous women where the blueness was marked, I have associated it with a condition of subinvolution of the vagina.

Afternoon Session.

Dr. R. Stansbury Sutton exhibited the

SPECIMENS FROM THREE CASES OF SUPRA-VAGINAL HYSTERECTOMY AND MADE SOME GENERAL REMARKS ON THE OPERATION.

Dr. W. Gill Wylie: In many cases of fibroid tumor, however, where hysterectomy has been performed for hæmorrhage, I think that curetting the cavity of the uterus would have obviated the necessity for the operation. With the curette, not only may the hæmorrhage be brought to a normal standard, but I have seen the tumor diminish in size. We meet with some cases, however, in which if hysterectomy is not performed the patient will die as the result of the hæmorrhage.

The President: I think that if Dr. Wylie uses the curette in cases of fibroid tumor, he must, notwithstanding the adoption of all antiseptic precautions, have a certain number of cases of septicæmia. Curetting is much more likely to be followed by septicæmia when there is a fibroid tumor of the uterus than when the operation is done for ordinary fungous granulations.

Dr. Wylie: I have had no trouble whatever. I invariably use antiseptics before the operation and douche out the cavity afterwards. I have never had septic poisoning in any case of curetting in my practice. I use the bichloride solution one to two thousand in the vagina and one to five thousand in the uterus.

Dr. H. P. C. Wilson: Where we have excessive hæmorrhage from a fibroid tumor, I believe that there is no remedy so efficient as the curette. I have never seen any evil results from its use.

Dr. John C. Reeve, of Dayton, Ohio: Have any of the members had any experience with incision of the cervix in the treatment of fibroid tumors? This was highly recommended some years ago.

Dr. Sutton: I have tried division of the cervix and have stopped the hæmorrhage, and have seen rapid fatty degeneration of the tumor occur in one case.

Dr. William H. Parrish, of Philadelphia, read a paper on

THE HIGH MORTALITY OF THE RECENT CÆSARIAN OPERATIONS IN THE UNITED STATES, WITH REPORT OF A CASE.

S. M., married, was admitted to the Philadelphia Hospital while in labor, September 20, 1885. She was the mother of two children, the last of which was born twelve years previously. Labor had begun on September 18, the membranes soon rupturing. She was seen by two physicians who had her sent to the hospital. The cord had prolapsed and the pulsations ceased before she was sent to the hospital. On admission she was found much exhausted with the cord protruding from the vagina. The resident physician not recognizing the gravity of the case, Dr. Parrish was not summoned until some hours after her admission. At this time the uterus was in a tonic spasm; the patient was etherized. The vaginal examination revealed merely a rigid condition of the cervix. The pelvic canal was roomy. The hand was introduced into the vagina and two fingers into the uterus. This examination showed two hard intra-mural fibroid tumours about the internal os. The author concluded that Cæsarean section should be performed without delay and three of his colleagues were sent for in consultation. They all agreed that attempts at enucleation should not be made, but they did not agree as to the necessity of Cæsarean section. They were in favor of craniotomy. The skull was perforated, but it was found impossible to grasp and crush the head. Various instruments were tried without avail. The necessity for Cæsarean section was then conceded by all. The uterus had then been emptied of its waters for at least forty hours. The vagina and lower part of the uterus were washed out with a solution of corrosive sublimate. The cervix was closed by tying around it a rubber drainage tube. The abdomen was opened and the section of the uterus made. At once a very offensive gas escaped. A large child was removed. The placenta was not in line of the incision. Antiseptic precautions were employed during the operation. Deep and superficial sutures were introduced into the uterus and the abdominal incision closed. A hypodermic injection of ergotin was at once administered. After the operation the tube around the neck was removed. The patient died twelve hours later from exhaustion and rapidly developing septicæmia.

At the autopsy the lips of the uterine incision were found in contact. Three dense intra-mural fibroid tumors were found.

Dr. Parrish then referred to the great mortality of this operation in the United States, and presented the statistics of Dr. Robert P. Harris, of Philadelphia. The following rules were then given for the performance of the operation.

1. Carefully determine the degree of obstruction and operate early in labor, as soon as the os is sufficiently dilated to permit drainage, and before the rupture of the membranes.

2. Operate with full antiseptic precautions, but the spray over the abdomen is unnecessary.

3. Control hæmorrhage by compression of the cervix either with a rubber tube or manually, preferably by the latter means.

4. Introduce numerous deep and superficial sutures so as to approximate accurately the muscular walls of the uterus, but do not carry the sutures into the endometrium. Removal of a section of the muscular wall is unnecessary.

5. Protect the peritoneum from the discharges, and if it become soiled, it should be carefully cleansed.

6. Ergotin should be administered at the beginning of the operation.

The President: In three thousand cases of labor I have never made a Cæsarean section nor any of its modifications. It is only now that the people are coming to recognize that craniotomy is not to be performed in any but the rarest instances, and that the sacrifice of life is unjustifiable. The explanation of the better results in other countries is not so much in the skill of the operators as in the condition of the cases when operated upon.

Dr. Parrish: I agree with the president that craniotomy should be an operation of exceeding rarity. The people are not yet ready in this country to accept Cæsarean section, but one of the great troubles is with the general medical profession who regard this as an operation almost necessarily fatal.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Oct. 20, 1886.

E. J. Doering, M.D., President, in the Chair.

Dr. Charles Warrington Earle entertained the Society with a very interesting account of his recent trip abroad, referring more particularly to observations made in the

HOSPITALS OF PARIS AND THE LABORATORY OF M. PASTEUR.

He first visited the Hospital Lariboisare, which has an outside and inside obstetrical department in which 3500 women were confined last year. This hospital has 875 beds, and the several pavilions are disinfected by carbolic acid, and thoroughly washing everything in them with solution of bichloride of mercury. But the favorite antiseptic is the biniodide of mercury. An interesting feature in this hospital is the contrivance for keeping up the body heat of prematurely born infants. It is a square box so constructed as to prevent the loss of heat, the top of which is covered with glass. In the upper part is placed a thermometer and a little basket with soft clothes, in which lies the baby. In the lower part of the box is an arrangement for the introduction of hot air, either from the heating apparatus of the building, or by heating air by gas or hot water bottles. For infants younger than seven months the temperature is maintained at 100° to 105° F. Between seven and eight months the temperature ranges from 85° to 100° F. The children are fed with breast milk when possible, and are not handled or exposed except when absolutely

necessary. By using this incubator they save a large number of the lives of the prematurely born infants. The Maison de Accouchements is Tarnier's private hospital. Although not a modern hospital, asepsis is aimed at, each patient being isolated and having her own irrigator, the permanganate of potash being the favorite antiseptic. Carbolic acid is sprayed in the wards continually. In turn he visited the Hospitals Bichat, Tenon, and Hôtel Dieu, in all of which the rule is cleanliness and disinfection. Dr. Earle said his most interesting visit was to the dispensary and laboratory of M. Pasteur. The dispensary was smaller than the number of patients demands, and here Pasteur spends his forenoons exercising a supervision over the treatment of the scores of unfortunates who go daily to be inoculated for hydrophobia. Nearly every country on the globe has sent patients here. Dr. Earle then explained the mode of preparing the virus. He said, also, that the majority of scientists on the continent are satisfied that M. Pasteur is honest in his endeavors to prove that he has discovered a cure for hydrophobia, and that they are simply waiting for time to prove if such be the case. They have great confidence in Pasteur, and believe that at the proper time he will announce the truth.

Dr. Charles F. Sinclair read a paper on

THE RELATION OF CERTAIN FORMS OF DEFECTIVE VISION TO HEADACHE IN YOUTH.

He said that the headaches arising from defective vision are very numerous. They possess certain definite characteristics according to the degree and character of the ametropia. Thus, instead of the usual classification, the ophthalmologist might furnish a terminology of his own based upon the condition of the eye. The pain in these cases increases as the errors of refraction become more complicated. A woman had suffered with intensely painful headaches for fifteen years who was found to have mixed astigmatism, and here properly adjusted lenses effected a cure.

It is in childhood and youth especially that these different forms of ametropia manifest themselves in headache. Dr. W. H. Day, of London, however, in his work on the "Nature and Causes of Headache," in which he devotes a lengthy chapter to the headache of childhood and youth, does not mention ametropia as a possible cause.

Nevertheless the eye, among school children, is frequently the cause of all the head trouble. Among American children one form of ametropia is exceedingly common and very disastrous in its effects. It is difficult to detect. It may in certain cases simulate different forms of ametropia, and even normal vision. He referred to a case in which occurs a slight degree of astigmatism under one dioptric.

Maud W., a school girl 14 years old, had suffered with severe headaches. On examination excellent vision was found, but minus lenses improved it and made it normal. After the use of homatropin, however, half a dioptric of hyperopic astigmatism was found, which was corrected and the headache cured.

Emily R., 15 years old, had suffered with constant headache for a year. On examination, .50 D manifest hypermetropia was found, and only this corrected, as patient would not submit to the use of atropia. This patient returned in a few days saying that her headaches were as bad as ever, when homatropin was used and a small degree of hypermetropic astigmatism was found. This being corrected, a cure of the headache was effected.

In another case there were constantly recurring attacks of vertigo and dizziness, together with severe unilateral headache caused by astigmatism, and which properly adjusted cylindrical lenses cured.

These are types of an exceedingly large number of cases where headache can be cured by a weak cylindrical lense. These cases are interesting not only because of their marked consequences, but because of their tendency, in certain cases, to exactly simulate other conditions, and they certainly suggest the advisability, in every case of severe headache, to examine the eye only when under the influence of atropia.

Dr. W. Franklin Coleman said that in an examination of the eyes of pupils in Boston, in eighty-nine cases of defective vision fifty-nine were traceable to over-study. Out of this number twenty-five to fifty per cent. of the cases of headache which occurred were relieved by supplying suitable glasses. Another class of cases in which headache occurs is when there is weakness of the recti muscles. By supplying proper prismatic glasses this weakness may be overcome, and the headache disappears. Other factors in producing headache are improper light and too low desks, thus causing the pupil to strain the eyes. So far as artificial light to read by is concerned, the incandescent electric light is probably the best, as it most nearly resembles sunlight, and is free from heat, dust and flickering.

Dr. F. C. Hotz said he believed the authors of such papers as this often exaggerate the importance of their observations. The result is, patients are often instructed to go to oculists, but do not do so on account of the expense, or for some other reason, and the patient therefore receives no treatment. But he has been surprised to see how few cases of defective vision come to him complaining of headache. He has not found it a prominent symptom. In looking looking over his record of cases he finds a great many cases of astigmatism, hypermetropia, and ametropia, in which the symptoms complained of are difficulty of vision, but not headache. Children often complain of not being able to see the figures on the blackboard, and consult the oculist for that trouble directly. But if a large number of cases of the eyes of children are examined, it will be found that in youth a normal eye is often far-sighted, and yet such persons are able to do the work required. However, in cases of defective vision, accompanied by headache, the defect of vision should be corrected.

Dr. J. E. Colburn related his personal experience with astigmatism, stating that not only had he headaches, but he could not study well, and these difficulties disappeared with the using of proper glasses.

DOMESTIC CORRESPONDENCE

"CHLOROFORM AS AN ANÆSTHETIC."

TO THE EDITOR OF THE JOURNAL:

Dear Sir: THE JOURNAL of September 25, contains an article by T. J. Hutton, M.D., on "Chloroform as an Anæsthetic." Although the vast majority of American surgeons have discarded chloroform, it is not well to allow some statements contained in this paper to pass unchallenged; especially, when coming from a careful practitioner, and based on a large number of observations.

Dr. Hutton states, that "ether could never fill the place of chloroform;" and gives amongst his reasons, "the huge quantity of ether required" to produce anæsthesia, "its louder, all-pervading odor," and "the indefinite time required for etherization." There are good and bad methods of administering ether, and the want of success which is often reported, must be ascribed to a failure in appreciating the fundamental principles, which govern the use of these two agents. It is not safe to compel inhalation of an atmosphere containing more than 4 per cent. of chloroform, whilst air saturated with ether vapor, can be inhaled with practical impunity. Anæsthesia by any agent, is the production of the lethal effects of that agent, to an extent corresponding with the degree of anæsthesia; and as insensibility deepens, the patient is brought nearer to a possibly fatal termination. It therefore follows, that chloroform should be given largely diluted with air; and ether with the least possible admixture. For these reasons, a good chloroformist is generally a bad etherist, and *vice versa*. To fulfil the foregoing indications, the best apparatus for use with chloroform, is Dr. Hutton's "rag," which is safer than any mechanical appliance. Where ether is employed, the conditions are so opposite, that for efficient administration, an inhaler is absolutely necessary. I lay down this proposition, because I do not intend to take the results obtained with paper cones, towels and sponges, napkins, etc., which support Dr. Hutton's position; but those where a good instrument delivers concentrated ether vapor, without appreciable waste by diffusion. Under these circumstances, the average time required to produce anæsthesia will be two minutes, and the average quantity of ether employed 1 oz.; the amount consumed in maintaining anæsthesia for thirty minutes, under 3 oz. The odor during the operation is perceptible, nothing more. After some years experience in Hospital, and private practice, I have failed to meet with a case which I could not anæsthetize. There are several instruments which will give these results; with some the quantity of ether varies, but is always under 2 ozs. Professor Müller, of Philadelphia, reports an administration with insensibility in thirty seconds, I have succeeded in obtaining unconsciousness in forty seconds. Would any careful physician attempt to do that with chloroform? I hope not. Having gone over this subject so many times, I do not care to occupy space by recapitulating what can be found elsewhere; and will only add that these statements can be proved from good authority, or demonstrated at any time.

"Finally, as to safety, *the greatest of all considerations*," (the italics are mine). Dr. Hutton has never seen ill results from chloroform, in about 3000 cases. Elsewhere there has been 7000 consecutive administrations without a death; but deaths have occurred, and the average by the latest statistics is enormously in favor of ether. This is not alone sufficient, for a much more important fact, which seems often to be lost sight of, should be emphasized. The doctor, in enumerating the "limitations" under which he uses chloroform, says: "Fourthly, with one hand I administer the chloroform, and with the other I hold the pulse. Any change is instantly noted and I act accordingly—desist or push to completion." If anyone will carefully read the list of chloroform fatalities, recorded in Professor Lyman's work on anæsthetics, he will be struck by the fact, that in many cases the only change noticed was from life to death. Without any previous warning the heart's action has ceased, and efforts at resuscitation have been fruitless. I do not think that any similar case will be found where ether was used.

Care and experience are essential in administering chloroform, but such men as Snow, Clover, and Simpson, have reported deaths; and I am fully convinced that in comparing fatalities from ether and chloroform, we are safe in concluding in the majority of cases, that where ether was used the administrator was to blame, while with chloroform the anæsthetic is culpable. Yours truly, JAS. H. PARKINSON, L.R.C.S.

Sacramento, Cal., October 4, 1886.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 2, 1886, TO OCTOBER 8, 1886.

Major Jos. R. Gihon, Surgeon, granted two months' leave of absence, from Sept. 25, 1886., on surgeon's certificate of disability, in lieu of the unexpired portion of the ordinary leave of absence granted him in S. O. 158, A. G. O., July 10, 1886. (S. O. 227, A. G. O., Sept. 30, 1886.)

Major Wm. H. Gardner, Surgeon, ordered from Dept. Texas to Dept. of the East. (S. O. 227, A. G. O., Sept. 30, 1886.)

Capt. Washington Matthews, Asst. Surgeon, granted leave of absence for one month and twelve days, with permission to go beyond sea. (S. O. 232, A. G. O., Oct. 6, 1886.)

First Lieut. W. W. R. Fisher, Asst. Surgeon, leave of absence extended one month. (S. O. 230, A. G. O., Oct. 4, 1886.)

First Lieut. Wm. C. Borden, Asst. Surgeon, relieved from temporary duty at Ft. Bridger, Wyo., and ordered to return to his station, Ft. Douglass, Utah. (S. O. 126, Dept. Platte, Oct. 2, 1886.)

First Lieut. Wm. P. Kendall, Asst. Surgeon, granted leave of absence for one month. (S. O. 81, Div. Pacific, Sept. 24, 1886.)

Col. John F. Hammond, U. S. Army (retired), died at Poughkeepsie, N. Y., Sept. 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING OCTOBER 9, 1886.

Suddards, James, U. S. N., Medical Director, will convene Medical Board, Oct. 6, 1886.

Browne, J. Mills, U. S. N., Medical Director, ordered to report to President Medical Board Oct. 6, 1886.

Dean, R. C., U. S. N., Medical Director, ordered to report to President Medical Board, Oct. 6, 1886.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, OCTOBER 23, 1886. No. 17.

UNITED STATES ARMY MEDICAL DEPARTMENT.

ORIGINAL ARTICLES.

THE INCISION, DIGITAL EXPLORATION AND DRAINAGE OF LUMBAR ABSCESSES.[1]

BY EDMUND ANDREWS, M.D., LL.D.,

PROFESSOR OF CLINICAL SURGERY IN THE CHICAGO MEDICAL COLLEGE.

Lumbar abscesses in their own intrinsic nature are not more dangerous than others. They are rendered especially perilous only by the inefficiency of our explorations and by the consequent incompleteness of our local treatment. When thoroughly explored and kept completely disinfected, they rarely cause death.

The first step towards safety is the exploration. Here we are confronted by the published opinions of some of our ablest men, especially of the older class, insisting that the opening of lumbar abscesses and even the aspiration of them is fearfully dangerous. The limits of this paper do not permit an elaborate discussion of this antiquated opinion, which was true under old methods, but false under new ones. I shall assume that the nine cases related in this paper, as well as other established facts of antiseptic surgery, prove that where a lumbar abscess can be freely opened and kept thoroughly disinfected, there is positively no danger in the procedure. There is no hectic, no exhaustion, no pyæmia nor septicæmia. On the contrary the patient rebounds towards health, as if relieved of a great depressing influence. He grows plumper and ruddier, and makes in many instances a good recovery. I grant that certain cases are best treated at the outset by repeated aspiration, but if this fails, or is inapplicable from the abscess being already open, then the open method with regular disinfection is necessary.

Assuming this to be true, the thorough exploration of the interior of the abscess is a prime necessity, and it cannot be accomplished without the use of the surgeon's finger. Treves, of London, publishes three cases of digital exploration, and Erichsen quotes them with approval; but most authors seem not to have thought of it, and apparently would be horrified at the very proposal of such a thing.

The time to be selected is the earliest one at which a diagnosis can be made. A lumbar abscess at the outset is a simple sac, without any complicated pouches, but as it gets older, the pus sometimes burrows to far distant parts, greatly increasing the difficulty of exploration and of disinfection and drainage.

The steps of the operation vary with the locality. Where the abscess points behind in the lumbar region, the following anatomical arrangement almost always exists: The original sac is inside the body, but behind the peritoneum. A small orifice at the outer border of the common mass of the *erectores spinæ* muscles conducts the pus outward to another broad sac which expands beneath the integuments. This double arrangement is an effectual barrier to any efforts to disinfect the abscess by antiseptic injections thrown merely into the outer sac. The great interior fountain itself must be opened, explored and tubed. The first step is to open the external sac widely. The second is to examine the floor of the cavity with the finger, and if necessary with a large probe, until we find the opening leading to the interior sac, which orifice is usually in the groove just outside the border of the common mass of erector muscles, but sometimes lies in the angle where the crest of the ilium approaches the spine. These openings vary in size from an eighth of an inch to three-quarters of an inch in diameter. Dilating the orifice, with the aid of an incision if necessary, the finger is inserted to examine the interior. Passing inward the spinal column can be examined to search for necrosed portions, or for excavations whence sequestra have previously exfoliated. In the lower parts of the sac pieces of the exfoliated bone are sometimes found. Passing upward beneath the ribs one often finds the kidney lifted out of its bed, and pressed forward with other tissues. Still higher the sac may terminate in a rounded pouch behind the liver, or extend upward behind the edge of the diaphragm, requiring a long bent probe to complete the examination. Below, it may terminate in a rounded hollow, or extend down into one or both iliac *fossæ*, or passing into the lesser pelvis make its escape by the sciatic notch into the thigh. Still oftener it burrows beneath Poupart's ligament into the front of the thigh. Probes and flexible bougies are valuable in tracing extended channels, but the touch of the finger is indispensable in exploring the short pouches, and in finding the entrances to the longer ones.

When the abscess points in the angle between the crest of the ilium and the spinal column a wide opening should be made into the external sac, and as before said, the narrow opening into the inner one must be enlarged. The finger then readily explores the cavity. Often it runs forward along the internal

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

iliac fossa towards Poupart's ligament, where another free opening must be made. At other times it runs upward behind the kidneys, and sometimes sends pouches in three or four directions.

When the abscess points above Poupart's ligament, it presses away the peritoneum so that there is usually no danger in opening it a little above the ligament and in front of the anterior superior spinous process of the ilium. If it opens below the ligament, a free incision must be made to admit the finger. If the finger is too short, or too large, a Brittania metal sound is bent to proper form and carried upward under the ligament, if possible. If the great length of the lower channel prevents this, we must cut down upon it just below the ligament, and pass the sound under it into the pelvic section, and then cut down upon it as before. The finger being introduced shows the size and form of the sac at that part. Next let the metallic sound, or what is often better, a flexible Mercier's *sonde coudée*, be used to trace the channel upward and backward into the lumbar region. If this is successfully accomplished, the next step is to turn the patient on his face or side and cut down upon the sound by an incision much like that of lumbar colotomy, only keeping more towards the spine and passing into the cavity through the groove along the external border of the common mass of erector muscles. The incision may be either longitudinal or transverse at pleasure. Motions of the sound made by an assistant will help the surgeon's finger to identify the exact position of the abscess, especially if the instrument be pretty large and firm. The finger should now be inserted into the lumbar cavity and made to search the whole interior exactly as in cases where the first pointing is in the lumbar region. Every opening must be tubed, and the cavities all be kept well disinfected. As the upper tube will take away the pus at its source, and prevent it flowing down to the lower cavities, the latter can be healed without difficulty, thus reducing the dangerous size and complexity of the cavein, and giving us a comparatively small and simple abscess to deal with.

The following cases from my own experience illustrate the subject:

Case 1.—A woman of middle age entered Mercy Hospital with a fluctuating tumor four inches in diameter on the right lumbar region. Coughing caused succussion as in hernia. The exploring needle brought out pus. The patient being anæsthetized, I incised the tumor freely and evacuated the fluid. The floor of the sac was on the external surface of the muscles of the trunk. In the groove along the external border of the common mass of the erector muscles, I found a hole about a quarter of an inch in diameter leading through the abdominal walls. Enlarging this with a bistoury I inserted my finger and found a large interior cavity, some seven inches long and three inches broad. The inner border was formed by the spinal column. The vertebræ were exactly normal in form, there was no naked nor ulcerated bone, and the bony surfaces were covered with a thin healthy periosteum. The upper end of the cavity was a rounded *cul-de-sac* behind the right lobe of the liver. The kidney and the ascending colon were lifted forward and inward by the pressure of the abscess. The inner surfaces of the lower ribs were examined and found healthy, and the lower end of the abscess was a simple *cul-de-sac*, like the upper. Neither the finger nor the probe could detect any diseased bone, nor any pouches or passages leading to other parts. It appeared to be purely an abscess in the cellular tissue, and though large, it was very simple in form. It was very thoroughly washed out with antiseptics, a large drainage-tube inserted, and the patient under daily antiseptic injections and dressings rapidly improved in health, and is now nearly well.

Case 2.—A married woman, aged about 33 years. She had a fistulous orifice in the right lumbar region, which had been discharging several months. Potts' disease caused by a fall existed with protuberance of the second lumbar vertebra. She was thin, rather weak and very nervous, but able to keep about the house. Ether was given and the patient placed on the left side, and a free opening made through the skin. The outer sac was found to be small. The opening from the outer to the inner sac was about a third of an inch in diameter. This was enlarged, and the finger inserted. The inner cavity was ovoid in form, about six inches in length and two and a half inches in breadth. Two small pieces of bone lay loose within it, and several others had previously been discharged. The affected vertebra lay directly opposite the opening and was easily examined with the finger. The periosteum was thickened and the form of the body of the bone somewhat changed by the effusion of provisional callus, as well as that of the vertebra below. On the side of the body of the bone was a concave excavation like the bowl of a teaspoon, but there was no longer any naked ulceration of bone to be felt. Apparently the ulcer was healed, and a smooth periosteum lined the hollow. Neither the finger nor the probe succeeded in touching carious bone anywhere. Apparently the caries had become spontaneously cured and only the abscess with the two loose pieces in it remained. These were extracted, a large drainage-tube was inserted, and antiseptic injections regularly kept up. The patient did well as long as she remained within reach of observation, but I lost sight of her, and do not know her present condition.

Case 3.—A boy aged 7 years, much emaciated and weak. A bad Potts' disease existed at about the first lumbar vertebra, with very great deformity. A lumbar abscess pointed on the left side behind. I aspirated the tumor about three times, in hopes to obtain one of the cures which sometimes reward this method of treatment. After the last aspiration, the pus ulcerated its way out along the track of the puncture. Knowing very well the disasters impending from sepsis unless met by prompt measures, I anæsthetized the patient and opened the external sac, which was about three inches across. The opening to the inner sac lay in the usual position alongside the common mass of the erector muscles, and was over half an inch in diameter. The inner sac was very large, some parts being beyond the reach of the finger. This being my first case of digital exploration of lumbar abscess, I was more timid than

I am now, and did not examine the bodies of the vertebræ, but withdrew my finger, inserted a large drainage-tube, and instituted a daily wash-out with a 2½ per cent. solution of carbolic acid. No hectic followed; on the contrary the patient gained greatly in health and strength, and was obviously relieved of a deadly depressing influence. As the patient lived at a distance, I did not learn the subsequent history, and do not know whether the antiseptic measures were steadily followed up, but so long as kept under observation, the improvement in his condition was immense.

Case 4.—An exceedingly complex case. The patient was an adult male aged about 42 years. He came from a distance with the belief that he had a hip disease with an abscess pointing on the outer side of the left thigh. It was a remarkable instance of a lumbar abscess burrowing a long distance, and requiring several openings to explore and disinfect the cavity. The external tests, such as rotation of the femur, etc., failed to prove any true hip disease, but I found, much to the patient's surprise, a moderate but perfectly distinct Potts' disease with the usual deformity affecting the ninth dorsal vertebra. There was a small contracted fistula yielding only a slight discharge at the angle where the crest of the ilium approaches the spine. On the middle of the outer side of the thigh there was a large fluctuating tumor some six inches in diameter.

Having anæsthetized the patient, I opened the tumor freely and evacuated the pus. It extended upward and backward far beyond the reach of the finger, but a long probe traced the cavity through the sciatic notch, and into the pelvis, where its crookedness prevented further progress of the instrument. I now passed a director into the small fistula above the crest of the ilium, opening the external sac, which was very small, as was also the opening leading to the inner sac. Enlarging the orifice the finger was inserted, and three channels were found, one leading downward through the pelvis towards the sciatic notch, and thence out of the notch and down to the abscess on the thigh; the second led forward into the iliac fossa and terminated near the anterior superior spinous process of the ilium. I opened this widely above Poupart's ligament, and was able by putting an index finger in to touch the index of the other hand inserted at the posterior opening. The peritoneum seemed thickened and firm, making a strong barrier between the fingers and the intestines. The third channel was rather small, and led directly upward along the psoas muscle, and behind the kidney. I inserted a finger and cut down upon it just below the twelfth rib, where, inserting a probe, I traced the abscess still onward behind the diaphragm towards the body of the deformed ninth dorsal vertebra. All the cavities were tubed and disinfected and treated with daily antiseptic injections.

Doubtless by exsecting about two inches of the shafts of the ninth and tenth ribs, the finger could have been inserted directly upon the carious body of the affected vertebra, and perhaps a successful scooping of the bone effected, but I desisted for these reasons: Across the body of each dorsal vertebra winds a pretty large intercostal artery, whose ligation in such a locality would be rather difficult. I judged it best, therefore, to try every other measure, before encountering this danger. I have proved by abundant experience that a daily irrigation of a weak solution of muriatic acid conveyed through a catheter close to a carious bone will often completely dissolve the dead osseous tissue in a moderate time, and effect a permanent cure. Having therefore provided a route by which this plan could be put in operation, the patient returned to his home with a letter of advice to his physician counseling that measure, as well as the regular disinfection of the channels below. No shock or hectic fever followed the operation, and at the last advices the patient was steadily improving.

Case 5.—A boy 5 years of age with Potts' disease causing decided projection of the tenth dorsal vertebra. He was much exhausted, and unable to walk about the room. An abscess was pointing on the right lumbar region. Being freely opened under anæsthesia the external sac was found to be about three and a quarter inches across. The opening leading to the inner sac was in the usual location at the outer border of the erector muscle, and was of a size barely sufficient to admit a pencil. Enlarging it partly by notching with a bistoury and partly by dilatation with the finger, the index was freely inserted. The inner sac was smaller than the external. A prolongation extended to the affected vertebra, but neither the finger nor the probe after a very careful search could detect any really naked or carious bone. The cavity was disinfected, a large drainage-tube inserted, and daily injections of antiseptics instituted. A spinal brace was applied, and the patient returned to his home and to the care of a skilful family physician. He progressed well. No hectic nor septicæmia occurred. The discharge diminished to a mere trifle, the patient became fat and strong, and the spinal inflammation disappeared so as to allow of free and active motions without pain. Several months have now elapsed and the tube is still kept in as a matter of prudence, but the child runs freely about the house, and has grown so tall as to necessitate a new spinal brace.

Case 6.—This is an instance of an abscess breaking in the lumbar region; though really iliac in its origin. The patient is a woman aged about 26. Hereditary syphilis was suspected in the case, but not proved. Some months prior to my visit an abscess pointed and broke in the left lumbar region in the angle between the ilium and the spinal column, and discharged freely. She fell into hectic fever, which, however, subsided after a time. At the time of my visit there was no fever and the discharge was small, but the patient was very thin and feeble. Opening the outer sac, I found a small orifice leading to the inner cavity, which I enlarged and inserted my finger to explore the interior. To my surprise I found no lumbar cavity, but an elongated and irregular sac lying in the iliac fossa and reaching nearly to the anterior superior spinous process. The cavity was tubed and disinfected, and placed under full antiseptic treatment, in the hands of a skilled family physician. She improved in all respects and continued to

gain for two months, when inflammation occurred to some extent near the anterior superior spinous process of the ilium, which is doubtless due to the anterior portion of the abscess sac being imperfectly drained and disinfected. I judge that complete success will require an anterior opening, as well as a posterior one.

Case 7.—Male, æt. 36. No evidence of Potts' disease present. A tumor gradually formed in the right iliac fossa, extending laterally further than is usual in perityphlitis, as it could be felt above the crest of the ilium. Fluctuation was very evident above the outer third of Poupart's ligament, and upward to the anterior superior spinous process of the ilium.

I anæsthetized the patient, opened the sac freely and evacuated the pus. The peritoneum was already pushed well aside by the pressure of the abscess, so as to require no special care. A very large reservoir of pus occupied the iliac fossa, but the finger detected no caries of the ilium. The upper and posterior part extended beyond the reach of the finger, but a flexible metal sound passed readily into the lumbar region to a distance proved by measurement to reach above the kidney. The sound was left in this position and the patient turned on his side. I then made an incision in the groove along the outer border of the common erector mass of muscles, and dissected down to the sound. Inserting the finger, I found that the cavity extended well up behind the kidney, but was much narrower than that in the iliac fossa. No other prolongations were discovered, and the patient did well at first. However, in a short time a hard inflammatory swelling appeared in the iliac fossa of the opposite side of the body. The temperature rose, and the patient fell into delirium. The swelling increased in size, but presented no fluctuation. However, after a little delay I opened it above Poupart's ligament and found deep in, and covered with a thick mass of inflammatory deposit, a large cavity of putrid pus, which was evacuated, and the cavity tubed and disinfected.

A day or two later the old channel of communication from the original abscess to this one, which seemed to have become blocked by the swelling or clots, re-opened, so that injections could be thrown across from one iliac abscess to the other. The delirium continued and the patient died of a cerebral attack caused, probably, by septicæmia.

I look upon this not so much a failure of the principle of the operation, as an instance showing the danger and folly of postponing it until long passages have burrowed into distant parts, and the whole system become poisoned with septic absorption. It is obvious that the operation should be made at the earliest possible period.

Case 8.—A young woman with no evidence of Potts' disease. She had a large abscess pointing above the outer part of Poupart's ligament. On opening and exploring, I traced it upward and backward to the angle between the crest of the ilium and the spine, where I made a counter opening and instituted free drainage and injections to be thrown through from one opening to the other. I believe the patient did well, but as she lived at a great distance I soon lost sight of the case.

Case 9.—A woman with no clear proof of Potts' disease. She was able to take the journey to the city, but was considerably exhausted from a lumbar abscess which had been discharging just above the groin for months. I opened freely both above Poupart's ligament and in the lower end of the lumbar region behind. Large drainage tubes were deeply inserted, and copious carbolized injections daily thrown through from one wound to the other. The patient began to return towards health at once. She grew daily stronger and plumper, and when last heard of some months later she was almost restored to soundness, though still wearing the tubes for safety.

The following list of opinions shows the contradictory and confused state of thought on the opening of these cavities:

The elder Gross left on record his opinion that lumbar abscesses, especially old ones, should not be opened until about ready to burst.

Prof. D. Hayes Agnew expresses views nearly similar (Agnew's Surgery, vol. II, p. 884).

Alex. Shaw, of England, discourages opening the cavities, but still hopes something from Listerism.

Mr. Treves, of London, at first advocated only repeated aspirations, but later has published three cases of digital exploration, with favorable results. In one of them he removed a piece of necrosed bone.

Erichsen, of London, advises antiseptic opening, and even suggests digital exploration, but does not speak of having tried it.

König, of Germany, advocates drainage in a downward direction, but omits to speak of antiseptic cleansing.

Holmes, of England, advises to allow the abscess to burst spontaneously, and on no account to open it.

Ashhurst, of Philadelphia, opposes opening.

Bryant, of Guy's Hospital, London, advises not to open early, but if the abscess progresses, to open antiseptically.

Hamilton, of New York, remarks on the contradictory state of surgical opinion, and evidently hesitates. On the whole, he advises to evacuate gradually, and never to use probes, tents, or injections, until the opening has been running several weeks.

I am led to the following conclusions by a pretty extensive experience in various methods which have been in vogue:

1. Some lumbar abscesses recover simply by a series of aspirations, with or without antiseptic washing out. This method is simple, and where the choice offers itself should be tested first.

2. If the aspiration plan fails, or is inapplicable in consequence of the abscess being already open, then free incision, exploration, and complete disinfection should be carried out at once.

3. If residual abscesses appear in the course of the treatment, they should be served in the same way as the primary one.

4. The sudden evacuation of a large cavity filled with pus, provided the sac is immediately disinfected

and kept so, has none of the dangers supposed by the old authors to beset the case.

Dr. Byrd, of Quincy, Ill., in discussing the paper, spoke of the value of per-oxide of hydrogen.

Dr. Fenger, of Chicago, suggested that the danger in opening psoas abscesses was to be found in the character of the abscess, the result of tubercular abscesses being much worse than a simple psoas abscess; that the value of the treatment suggested by Dr. Andrews consisted in the fact that he made his counter openings near the origin of the trouble.

Dr. Lewis, of Kansas City, inquired concerning the earlier symptoms of psoas abscess.

Dr. Hamilton, of Ohio, thought it strange that such large accumulations of pus existed without being detected by the physician.

Dr. J. Ransohoff, of Cincinnati, believed that such abscesses should be drained after free incision if not arising from tubercular processes. Abscesses of tubercular origin he thought were unfavorably influenced by incision. The origin of the trouble was to be sought before determining the character of treatment.

Dr. Andrews, in closing, said that the symptoms of such condition where caries was present consisted in elevation of temperature, some fulness or swelling, dulness in percussion at site of tumor, and the possible use of aspirator. That the incision should be carried to the extent of a thorough exploration of the cavity seeking for dead bone, providing for thorough drainage and antiseptic cleansing. That he had opened abscesses where spicula of bone were found in the cavity, but where the neurotic process had already been limited and the parts were healing.

A REMARKABLE CASE OF FOREIGN BODY CARRIED TEN YEARS IN THE EYE.[1]

BY T. E. MURRELL, M.D.,
OF LITTLE ROCK, ARK.

A student in the Canehill College, Arkansas, session of 1875–76, was making some hydrogen gas with iron filings and sulphuric acid in a glass retort. Just as the gas began to escape from the retort pipe, and while still much mixed with atmospheric air, he chanced to bring a lighted match close to the escape pipe, when an explosion took place. The retort was blown to atoms and the pieces of glass driven with great force in all directions. The young man received a severe wound in his right eye. The eye was found lacerated; a transverse cut in the cornea extending from the sclera on one side into the sclera on the opposite side. The supposition was that a flying fragment of glass had done the work by an oblique stroke and had passed on.

The eye was treated antiphlogistically, and although considerable inflammation and pain followed, in a few weeks all became quiet and a transverse corneal scar marked the seat of injury. Some six years after this Mr. F., then a lawyer, consulted me. I found right eye as follows: Extending some two lines into the sclera inwardly and outwardly and transversely through the diameter of the cornea was a somewhat flattened linear cicatrix, into which the iris was drawn with obliteration of the pupil. Above and below was clear cornea through which could be seen fairly normal fibrillated iris. The scleral conjunctiva was of normal appearance, the eye appearing perfectly quiescent. He had had no trouble with it since the recovery from the accident, and came to me for the purpose of having an artificial pupil made for optical purposes. I found, however, that he had no perception of light, and explained to him the uselessness of such procedure. Taking into consideration the extent of the wound, involving as it did the ciliary body on two opposite sides, together with the fact that the iris was also extensively incarcerated, I warned him particularly of the dangers of sympathetic trouble in the other eye eventually.

Some two years ago Mr. F. again visited me. I found the eye *in statu quo*, with no redness, pain or irritation, or weakness of his left eye. I repeated my injunctions of caution, and now, upon conservative principles, advised enucleation of the injured eye. He returned home and occasionally wrote me, stating that he was afraid, since my information imparted to him of the dangers of sympathetic trouble, to carry the eye, and would at his convenience come and have it removed.

In February last he came with his mind made up to have the operation performed. At this time the scleral conjunctiva was perfectly clear, there was no tenderness over any part of the ciliary body, no pain, and the other eye was clear, strong, and V = Sn $\frac{20}{16}$ sharp. He was a hard student, and up to this time had spent many hours daily in close application to his law books. He said, however, for a year or two, his good eye showed more disposition to tire than formerly after much work, and concluded that one of the symptoms of sympathetic irritation was upon him.

I put a drop or two of cocaine muriate solution, 4 per cent., into the conjunctival sac, and in a minute after injected 10 minims of the same into the circumscleral tissues at four points. Five minutes later I proceeded to enucleate in the usual way, which was entirely painless, the patient and I carrying on a pleasant conversation all the while. When finished and the hæmorrhage staunched, I examined the eye in his presence. He asked me to look carefully for a piece of glass, as he could not but believe some fragment had lodged in the eye. I was disposed to make light of his opinion, and stated as my reason, the entire absence of irritation of any sort in the eye, which would hardly have been the case with so irritating a body as a piece of glass lodged in the eye. The eye was divided into halves through its equator. In the interciliary region, occupying the position of the lens, was a mass of lymph. The other structures of the uveal tract, I should say, were entirely atrophic, and the vitreous chamber filled with straw-colored water. On opening into the lymph deposit the knife came upon a hard body which, on further exposure, proved

[1] Read in the Section on Ophthalmology, Otology and Laryngology at the Thirty-Seventh Annual Meeting of the American Medical Association.

to be glass. The encystment was complete. The glass measures 15 millimetres long, 12 millimetres wide and 1½ millimetres thick, and is a parallelogram with one corner broken off. Its position was in a vertical plane parallel with the iris, and fully as large as the whole iritic surface.

The complete encystment of so large a body, with such sharp cutting edges, exactly in the ciliary region of the eye, with such extensive involvement of the ciliary body and incarceration o. the iris, with entire absence of tenderness, pain or redness of the eye at any time, taken together, serve, in my opinion, to mark this case as one unique and worthy of record.

SOME PRACTICAL SUGGESTIONS ON THE TREATMENT OF DIPHTHERIA.[1]

BY WM. PORTER, M.D.,

OF ST. LOUIS, MO. PHYSICIAN TO THROAT AND CHEST DEPARTMENT OF ST. LOUIS PROTESTANT HOSPITAL, OF ST. LOUIS CITY HOSPITAL, OF THE FEMALE HOSPITAL, AND PHYSICIAN TO ST. LUKE'S.

Diphtheria is a common disease, and it is one of the most fatal. As one illustration of many, in five years there were 17,193 cases in New York alone and 7,263 deaths. It is a disease that every physician will be called to treat sooner or later, and being called must act promptly. This is not the place for a long essay upon the different theories of diphtheritic contagion and progress; rather let us enter at once upon the discussion of the practical questions involved in conducting the disease to a favorable issue.

Let me very briefly sketch the manner of invasion according to conclusions which seem most reasonable and are by many accepted:

1. Diphtheria is contagious—or rather portagious, and of parasitic origin.

2. It is most readily implanted upon a mucous membrane denuded of its epithelium.

3. It is probably always local in its incipiency, sometimes becoming rapidly systemic, though in rare cases apparently systemic from the beginning.

To further explain rather than to argue these propositions, let me say that the best protection against diphtheria is a mucous membrane entirely healthy; and an ordinary acute or subacute laryngitis or pharyngitis is a condition favorable to the implanting of the diphtheritic germ. When the epithelial layer is intact the diphtheritic germ finds no foothold, but when there is an abrasion or denudation of the lining membrane the diphtheritic bacteria first attach themselves to the surface so prepared for them. This is the local period of the disease and no micrococci are found in the blood—there is no constitutional symptom. Sometimes, though there may be rapid surface involvement, and free formation of the characteristic membrane, there may still be little absorption of the diphtheritic virus.

Many of these almost purely local conditions suggest a doubt as to their specific nature. It is well to give the patient the benefit of the doubt and to treat urgently all suspicious-looking exudations upon the surface of the respiratory tract. Practically, a certain number of cases of diphtheria are constitutional from the beginning, the point of infection being in some recess of the naso-pharynx or larynx, and easily overlooked—or is beyond the range of vision. I am not sure but that infection may occur from primary invasion of the membrane of the alimentary canal. Klebs in the second Congress of the German Physicians, speaks of a diphtheritic involvement of Peyer's patches resembling the reticular appearance in the early stages of typhoid. In by far the greater number of cases the rapid multiplication of the bacteria—whether sphero-bacteria as are found in severe cases, or whether short and slender rods as in milder cases—produces an inflammation of the mucous membrane, exudation takes place, the epithelial cells die and the bacteria pass into the blood and rapidly multiply throughout the circulation. Even should we deny with Beale, that the contagium is bacteria, we still must admit that the hypothesis of local infection furnishes the most rational explanation of the sequence of symptoms.

Granting this, we have two purposes in treatment in the early stages of diphtheria:

1. To destroy or render harmless the local manifestation of the disease.

2. To increase the power of resistance in the general system to infection.

In dealing with the false membrane all measures which would tend to irritate or injure the air passages should be avoided. There should be no tearing away of the exudation, or application of caustics—nor do I think that, except in cases where there is only a small well-defined patch of membrane, the use of the galvano-cautery will prove expedient. To prevent absorption, not only should we avoid making new abrasions in the throat, but I have thought it wise as far as possible to cover up those that already exist.

First of all it is well to remove from the naso-pharynx, or pharynx, if that be the site of invasion, whatever of accumulated mucus and *débris* there may be. This may be readily done by means of a small syringe, and a weak solution of salt water or of Listerine. This may be used either through the nostril or directly in the pharynx. To loosen the attachments and hasten the resolution of the diphtheritic membrane many means have been advocated.

When the patch can be reached a solution of papayotin may be applied; or better still, one of trypsin. This last used in solution, as suggested by Fairchild and Foster, or still better, a few grains with one or two of bicarbonate of soda, made into a paste with water and spread upon the diphtheritic patch, is the most rapid solvent I have known. If the local disease is beyond the reach of such an application, an alkaline solution of trypsin may be sprayed into the nose or larynx.

After several applications of trypsin within the hour, a still further attack may be made upon the local disease. Having used more or less freely most of the germicides, astringents and antiseptics commended in the treatment of diphtheria, I have abandoned all else for a solution of equal parts of the tincture of the chloride of iron and glycerine. I have cause to consider this, when well applied over

[1] Read in the Section on Laryngology, at the Thirty-Seventh Annual Meeting of the American Medical Association.

the entire extent of the diseased surface, an almost complete bar to the progress and absorption of the diphtheritic virus.

1. If the potency of the disease lies in the rapid multiplication of bacteria, so strong a chlorine solution is certainly indicated.

2. If absorption takes place through the abraded surfaces and "mouths of lymphatics open," as stated by Oertel, we would from *a priori* reasoning expect some good from the local use of iron, while the glycerine may be something more than a mere vehicle, in that it may by affinity relieve to some extent the turgid capillaries of the mucous membrane. The application should be made frequently.

Let me say, in urging the efficacy of this agent, that for two years I have not seen a case of diphtheria die where the whole of the false membrane could be seen and repeatedly covered with this solution and where appropriate general treatment was given. Thrice within the last week and many times during the past year I have seen the characteristic membrane shrivel up and become detached under the influence of the iron and glycerine.

When the local attack is out of reach of the direct application by means of the brush or, better still, the cotton covered probe, the case is very different. When the invasion is in the naso-pharynx or in the larynx the result may well be dreaded. Even in such instances I believe the best procedure is to apply the iron locally by spray and where possible by the cotton covered probe.

The covering in of the diphtheritic patch with tolu varnish as recommended by Mackenzie may follow the thorough use of the iron solution, and is doubtless protective.

Not only is local treatment important, but it is important to institute it early. The physician should be called at once in every case where there is a doubt. Parents should feel that they are responsible for delay, and that delay is exceedingly dangerous. Many cases that during the first twenty-four hours are easy to treat and curable, are a little later beyond the reach of the most skilful.

A few words as to general treatment. Here too I have no sympathy with halfway measures. First of all in every case, I nearly always counsel the administration of enough of calomel and soda combined to thoroughly evacuate the alimentary tract. It empties the canal of any accumulated material, it stimulates important secretions, and with Ritter, though not to the extent to which he advocates it, I believe it has a favorable influence upon the general condition. At least it clears the decks for action. As soon as the bowels of the child have been well moved, and sometimes not waiting for that, the internal use of the iron and glycerine solution (the same as that used in the throat) may be begun; for we need not fear any chemical reaction. To show that others are falling back upon this well-known agent let me quote from an editorial in a recent issue of the *New England Medical Monthly:* "It is interesting and somewhat gratifying to note that after each excursion into the domain of experimental medicine the profession invariably returns to the older and more effective method of treating diphtheria which consists of tonic doses of the tincture of iron and a system of extreme nourishment."

To anticipate and antagonize general invasion the general as well as the local treatment should be instituted early. Where the symptoms demand I prescribe two drops of the iron and glycerine solution for each year of the child's age, in a little water every two hours, and midway between each dose the diphtheritic patch is to be touched or sprayed with the solution. Thus there is an opportunity for the ferric solution to be brought in contact every hour with so much of the diseased membrane as is in the pharynx.

I have not discussed much of the poly-treatment of diphtheria as practised to-day—nor have I time to outline the emergencies which may arise, as I had thought of doing. My object has been to propose a plain and direct method of treatment which any one may use and which is not an experiment.

Many other remedies are often to be added. Pilocarpine, when the skin is dry and there is spasmodic laryngeal contraction; quinine, when the fever is excessive; steam from slacking lime when respiration is labored and the respiratory tract dry; and tracheotomy or intubation when the larynx is greatly obstructed.

Let me in conclusion suggest that the physician demand of the people among whom he practices, that they call him at once when suspicious symptoms are observed, and that he answer quickly, act promptly, and see that his instructions are implicitly obeyed. To treat diphtheria is to fight a battle—there should be no delays, surprises nor compromises.

DOUBLE PYONEPHROSIS;

Perineal Median Urethrotomy; Removal of large quantity of Sandy Gravel; Dilatation of Ureters; Hypertrophy of Bladder; Death.

BY EDWARD HORNIBROOK, M.D.,

OF CHEROKEE, IOWA.

N. B. Batterson, æt. 51, consulted me July 17, 1881, and gave the following history: Ancestors for several generations long-lived and healthy. He enjoyed good health till ten years ago. He then had retention of urine brought on by heavy lifting? The physician in attendance retained gum-elastic catheter for eight days. At the end of that time the patient passed large quantities of blood. He says that this was after, not before removal of catheter. He has had constant vesical irritation since. Pus and mucus passed daily for first four years. He was then free from purulent or bloody urine for eighteen months. For last two and a half years he has been passing bloody urine and pus at frequent intervals. Hæmaturia has always occurred after lifting heavy weights, which he was often required to do in his employment as a grocer's clerk. Requires to urinate every half-hour, night and day. The symptoms were not relieved by recumbent posture. He has had frequent symptoms of a calculus passing through urethra, but never saw any. After these symptoms he often passes

large lumps of hardened mucus? Has not passed catheter for last two years. Bowels constipated and passages painful. Prostate gland enlarged and tender. Catheter passes easily; but there are two slight strictures in membranous portion of urethra. Urine drawn by catheter alkaline in reaction and mixed with pus. No stone in bladder.

Under treatment, principally with the dilute mineral acids, benzoic acid and rectal suppositories, his condition was ameliorated until May 12, 1885. He then complained of the usual symptoms of vesical calculus. I readily detected stone and advised operation. Very offensive pus escaped during the examination. After repeated trials I failed to grasp the stone with the lithotrite. It was of large size and placed just above and behind the neck of the bladder, apparently lodged in a pouch from which it could not be removed. He suffered little during the attempt; there was no shock and he seemed well as usual next day. I recommended lithotomy, but the patient refused to consent to the operation.

He passed from observation until October 12, when he sent for me and urged me to undertake the operation, as his health was giving way under his constant suffering. I reluctantly consented, as the urine was then strongly alkaline, contained large quantities of pus and was horribly offensive.

On October 20, in the presence and with the assistance of several of my professional confrères, I performed the operation according to Allerton's method. After dilating the prostate I introduced the scoop to dislodge the stone from the pouch in which I thought it to be imbedded, when it crumbled into small crystals. Upon passing my finger into the bladder the whole mucous membrane seemed covered with an incrustation of this sandy gravel which I was unable to remove without removing the mucous membrane with it. I removed what I could with the scoop and irrigated the mucous membrane thoroughly with a strong stream of carbolized water. By these means more than two ounces of this sandy gravel were removed. Shreds of mucous membrane were also washed away.

I retained a tube in the wound with the intention of practising daily irrigation. The next day the bladder was washed out till the water came away clear. After a few minutes nearly an ounce of fetid pus followed. This convinced me that the pus was discharging from the kidneys, and added to the gravity of the prognosis.

The washing out of the bladder was continued till November 9, when he sank exhausted. He suffered less after the operation than before.

A post-mortem examination was made twelve hours after death by Drs. Sherman, Vail and Burlingame, who kindly removed the bladder, kidneys and ureters for my inspection; as I was away from home at the time. The walls of the bladder were an inch in thickness; the ureters both dilated so that they were at least three-quarters of an inch in diameter; and there was about three ounces of pus in each kidney and its ureter.

Many questions, of course, suggest themselves as to the etiology, the course of the disease and the cause of the pathological conditions. I will not attempt to theorize but merely state the facts, leaving each reader to make his own deductions.

COLLECTIVE INVESTIGATION OF DISEASE.[1]

BY H. Z. GILL, M.D., LL.D.,

OF CLEVELAND, OHIO.

In making a report under the title of "Collective Investigation of Disease" for the city and vicinity of Cleveland, O., it has been necessary to collect the meteorological conditions and then examine carefully the daily death-records of the city. This material has been made a part of this report, in order that every one may re-examine it respecting the same diseases, or may use the data for other purposes.

The first step, after the appointment of your committee, was to ascertain the daily meteorological changes for the year to be reported. This could be done more accurately at the signal office at this station than anywhere else; hence, application was made to the Bureau at Washington for the data, and also for the ozonic conditions of the atmosphere. In reply to the latter part of the request (the other items having been ordered), I received the following reply:

"CLEVELAND, O.

"I would respectly state for your information that the Signal Office in Washington does not furnish any Station with ozone-paper and color scale for the purpose of determining the ozonic condition of the atmosphere.

(Signed) WILLIAM LINE,
Sergt. Signal Corps U. S. A."

The state of the barometer, the thermometer, the dew-point, direction of wind, amount of precipitation and state of weather as to cloudiness, were furnished promptly. Credit is due and thanks for the same are hereby acknowledged.

This report covers a period of one year, viz., from May, 1885 to April, 1886, inclusive.

The city of Cleveland, O., is situated in N. latitude 41° 30′; W. longitude 81° 27′; and has an elevation of 690 feet. The soil is generally sandy, and through it percolation is easily effected; hence it has been found best to abandon wells in the more central portion of the city, especially so since the water-supply from the lake is pure and abundant. The city is not generally densely built, and little danger from over-crowding is feared when compared with many of the large cities of this country. Allowing the population to be as estimated, 205,000, and the mortality, as given by the Annual Report of the Health Department of the city for 1884, as 3730 (or including still-births, as 4049), the mortality would be 18.17 and 19.75, respectively, per 1000;[2] while that of the United States for 1880 was estimated at a fraction over 18 per 1000.

Our investigations have had reference, mainly, to those diseases which are believed to be more or less influenced by atmospheric conditions, viz.: Diph-

[1] A report made to the Ohio State Medical Society, June 2, 1886.
[2] For 1885 it was 17.43 and 19, respectively.

theria and croup, cholera infantum, entero-colitis, and other diseases of this class; typhoid fever, measles, scarlet fever, and whooping-cough.

During the calendar year 1884 there were deaths:

From diphtheria and croup	196;	my report,	180
" cholera infantum	278	"	"	313
" measles	197	"	"	6
" scarlet fever	18	"	"	24
" typhoid fever	121	"	"	78
" whooping-cough	37	"	"	30

Columbus, O., had of cholera infantum for 1885 (July, August, September), 40 deaths; the maximum temperature having been 96.7° on July 20.

From the same yearly report of Cleveland, there were 1239 deaths from zymotic diseases, of which 847 were from the above-named six diseases; for 1885 there were 1016. My examination for the year (May, 1885, to April, 1886, inclusive) shows a total mortality of 4081. The first in the list—diphtheria and croup—gives a total of 180, distributed through the year as follows:

May....8, (21)[3]...Sept., 10, (27)....Jan., 15, (22)
June....9, (34) ...Oct., 22, (45)....Feb., 6, (16)
July... 11, (33) ...Nov., 24, (47)...Mar., 20, (29)
Aug... 9, (28) ...Dec., 26, (44)...Apr., 20, (24)

This shows 380 cases reported, giving a mortality of 47.36 per cent., a rather high ratio considering the absence of an epidemic.

We cannot say that atmospheric conditions, as shown by these meteorological tables, had any notable influence on this death rate, not over four in one day (Nov. 28 and Dec. 15) having been recorded during the year. On those days respectively the atmospheric conditions were:

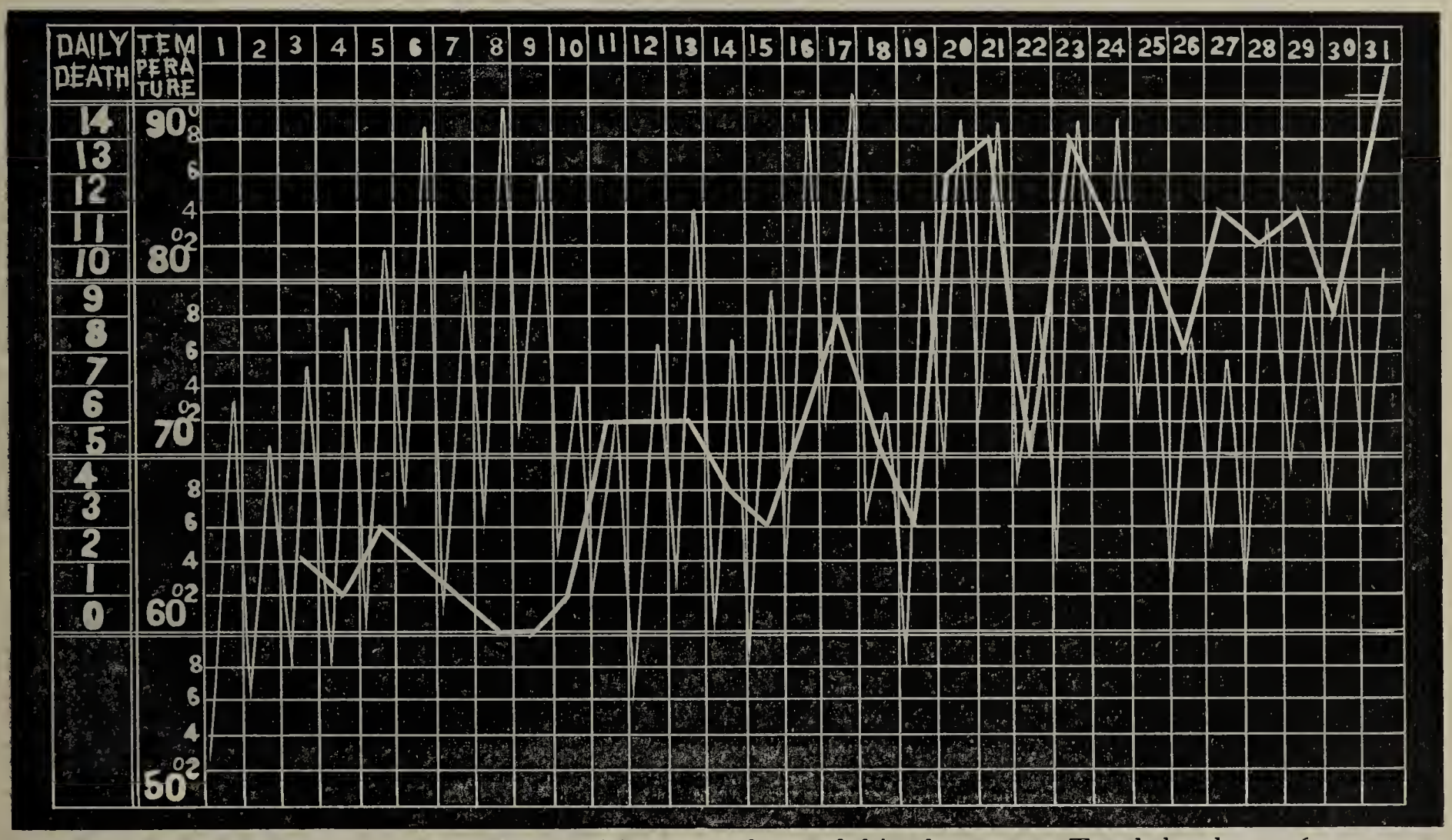
	Mean barom.	Mean temp.	Dew-point.	Wind.	Precipitation.
Nov. 28—	30.260	28.3	23.0	S.W.,	0
Dec. 15—	30.119	24.0	16.9	S.W.,	0

The number of cases and deaths reported are so distributed through the year as to show only the usual fact, that the first three and the last three months of the calendar year are those in which the disease occurs most frequently, viz., 208 cases, 113 deaths; the whole number being, 380 cases, 180 deaths—47.3 per cent.

No doubt many cases of mild form were not reported. This is in accord with a large table, in my work on Diphtheria, now in press, of 7019 cases of croup in the Hospitals of Paris, admitted from 1868 to 1880, viz.: September, 457, October, 500, June 517, all the other months having a higher number.

There are, however, conditions during this winter period of the year which may not pass unobserved;

CHART NO. 1.



Cholera infantum, 154; entero-colitis, 13; others of this class, 39. Total deaths, 206.

these are, the lower temperature, a less amount of ventilation, and crowding; hence, concentration of the poison, prolonged activity of the contagium, etc. We had occasion to bring these conditions to the notice of the profession fifteen or more years ago, when referring to some of the contagious diseases, especially variola, in which it was pointed out that concentration of the active agent, arising from a more defective ventilation and a lower temperature, were conditions favoring the spread of smallpox, scarlet fever and diphtheria. I say conditions—this it is which we are considering more particularly. With this disease we might consider the other contagious

[3] Numbers in parentheses indicate the number of *cases* reported to the health office.

diseases; but in the order of our report *cholera infantum* and *kindred diseases* come next.

During the year reported, there were *among children, from these diseases alone*, 518 deaths, of which the alarming number of 428 occurred during July, August and September, 375 of them in the former two months. On one day, July 31, 16 are recorded; of cholera infantum alone, 13. If all were recorded in this class which I think belong to it, there would be in these three months at least 450 deaths, viz:

Cholera infantum, - - - -	296
Entero-colitis, - - - - -	64
Others of this class (see table No. 1), -	68
Additional cases (under head of "remarks")	22
Total, - - - - -	450

A ratio of over 11 per cent. of the annual mortality of the city.

On the 17th of July the maximum temperature was over 90°. On the Thursday after this the daily mortality rose to 13, and continued high for several weeks. (See Chart No. 1.) On the day of greatest mortality, July 31, the meteorological report is:

Mean barom., 29.920; mean tem., 73.6; m. rel. humid., 92.3; wind, N.; weather, clear; precip., 0.

The latter half of July had a high average temperature, 2.3° above the mean for the past three years; and a high dew-point, yet very little rain-fall. For the month of August the mean temperature was six degrees lower here than in July, and the death-rate from cholera infantum alone fell off nearly one-third, the mean temperature being 65.8°; while at Columbus it was 70°, with a higher mortality from cholera infantum than in July. Compared with corresponding months of 1884, there are some facts worth noting, if anyone could be incredulous on the relationship of temperature, etc., and diseases of this class: cholera infantum and allied diseases in children.

This relationship shows indications for hygienic measures which we may not enter into at length at this moment.

Diphtheria and scarlet fever each has prevailed to quite a notable extent throughout the year. The latter furnished 510 cases, with a mortality of 24, a per cent. of 4.7. Deaths from measles have almost disappeared from the record, there being no death in seven of the months reported, and no *case* reported in three months of this time.

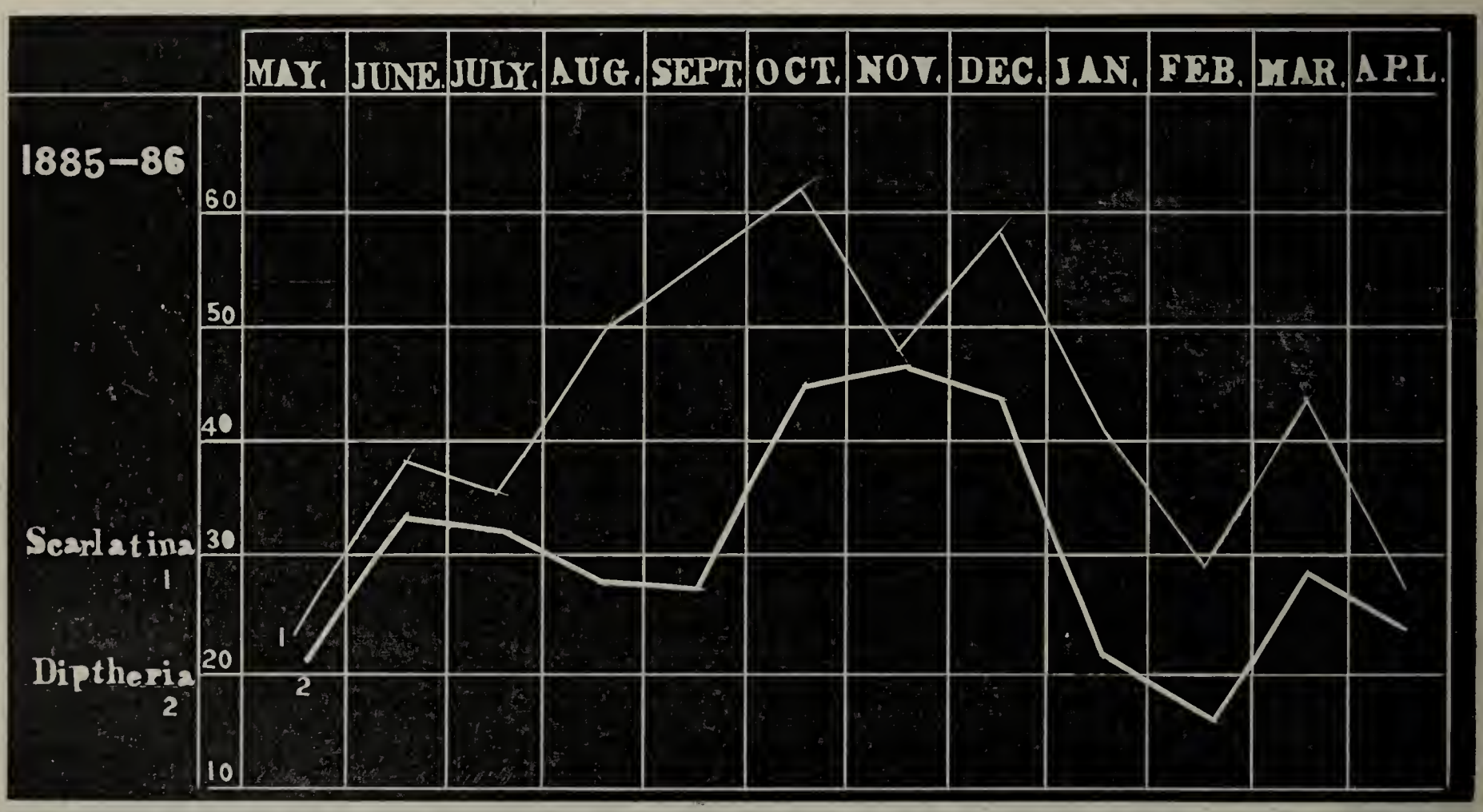
It is believed that the reports of cases of diphtheria, measles, and scarlet fever, made by the physicians of the city to the Board of Health. are fairly correct as to numbers; many, however, of the very mild cases, I have no doubt, are overlooked or ne-

DEATHS FROM CHOLERA INFANTUM.

		Mean temp.	Deaths			Mean temp.	Deaths
June,	1884,	68.5°	7	June,	1885,	64.5°	3
July,	"	69.0	73	July,	"	71.6	154
Aug.,	"	68.2	102	Aug.,	"	65.8	115
Sept.	"	67.3	65	Sept.,	"	61.6	27
		Mean barom.	Rel. humid.			Mean barom.	Rel. humid.
June,	"	30.052	69.3	June,	"	30.024	74.4
July,	"	29.893	66.6	July,	"	29.969	78.8
Aug.,	"	30.033	69.5	Aug.,	"	29.956	84.0
Sept.,	"	30.064	67.6	Sept.,	"	30.031	77.4

Chart No. 1, on preceding page, will give at a glance the relationship of temperature, dates and deaths for July, presented in a more apparent form, perhaps, than when in a table, the light line indicating the temperature daily, in its maximum and minimum, and the heavy line the daily mortality from

CHART NO. 2.—CONTAGIOUS DISEASES.



glected. Of course calculations are always made with this in mind.

The relationship of diphtheria and scarlet fever, as shown by Chart No. 2, is, we believe, more than accidental. In this year it is rather striking. The coexistence of epidemics of scarlatina, measles and diphtheria is pointed out in Sanné's work on Diphtheria, p. 324; but as before stated, we have no epidemic to report, and no special condition of atmosphere during this period in respect of dampness or otherwise.

During the months of February, March and April the deaths from acute pulmonary diseases were unusually frequent, viz., 33, 58, and 35, respectively. The meteorological conditions were:

Month.	Mean Barometer.	Mean Relative Humidity.	Mean Temperature.	Precipitation.	Wind.	Weath'r (Clear days.)
Feb'y,	30.093	79.5	25.4	1.55	S.	2
Mar.	29.964	79.1	34.9	2.00	W.	6
April,	30.061	76.2	49.1	1.78	N.E.	11

as influencing the temperature of the atmosphere of the region, or the additional degrees which arise from reflection, radiation, from the heat of cooking, or from whatever source.

Hygienic measures of every possible form and kind—food, clothing, bathing, ventilation, protection from exposure to the hot sun and from accidental heat, especially with quite young children, are strongly indicated. It would be out of place to enter at this time upon the medical treatment of any of these diseases. I may say, however, that at several times I have had printed *rules for the management of children during hot weather;* and have found that parents have been greatly aided by such printed directions.

The subjects of ill-ventilation, crowding of individuals in sleeping rooms, public halls and schools, have been hinted at under the remarks on contagious diseases. Not less than twelve years since I presented this subject under the general term of *dilution.* The same thought, varied a little, is now taking on the term or expression, attenuation. It is

CHART NO. 3.

1885 Months.	Mean Barometer.	Mean Temperature.	Mean Rel. Humidity.	Prevailing Wind.	Weather. Clear.	Weather. Fair.	Weather. Cloudy.	Precipitation.	Range of Temperature.	Total Deaths.	Diphtheria. Cases.	Diphtheria. Deaths.	Croup.	Cholera Infantum.	Entero-Colitis.	Other diseases of this Class.	Total.	Typhoid Fever. Cases.	Typhoid Fever. Deaths.	Measles. Cases.	Measles. Deaths.	Scarlet Fever. Cases.	Scarlet Fever. Deaths.	Whooping-Cough.	Acute Lung Diseases.	Marasmus.
May	29.928	55.6	75.8	N.E.	6	11	14	3.88	47.4	296	21	5	3	3	4	4	11	..	4	9	2	23	5	1	16	..
June	30.024	64.5	74.4	S.E.	14	16		7.22	42.2	270	34	7	2	3	4	4	11	..	2	5	..	38	2	2	9	7
July	29.969	71.6	78.8	S.W.	15	15	1	4.48	37.1	514	33	8	3	154	13	39	206	..	2	10	..	35	2	1	7	11
August	29.956	65.8	84.0	N.E.	8	11	12	5.14	40.9	498	28	7	2	115	38	16	169	12	5	...	..	49	..	6	7	2
September	30.031	61.6	77.4	S.E.	11	12	7	2.01	40.3	333	27	5	5	27	13	13	53	4	8	..	..	55	4	2	10	9
October	29.971	50.2	81.9	S.W.	6	11	14	3.78	44.1	298	45	8	14	5	7	15	27	35	12	2	1	63	..	1	12	6
November	29.961	40.8	81.3	S.	2	6	22	4.67	46.2	268	47	13	11	3	3	2	8	15	10	2	..	48	1	..	13	7
December	30.050	31.5	80.3	W.		15	16	1.68	58.7	328	44	19	7	....	....	3	3	29	10	1	..	58	3	3	18	3
1886 January	30.032	23.1	83.0	W.	3	12	16	3.35	62.6	281	22	9	6	1	1	6	8	6	6	3	..	41	1	3	27	..
February	30.093	25.4	79.5	S.	2	17	9	1.55	62.5	287	16	1	5	1	....	6	7	7	5	3	..	29	..	8	33	..
March	29.964	34.9	79.1	W.	6	16	9	2.00	66.4	391	29	11	9	....	2	7	9	7	10	3	2	44	5	8	58	..
April	30.061	49.1	76.2	N.E.	11	11	8	1.78	58.2	317	24	12	8	1	3	2	6	1	4	..	1	27	1	2	35	7
Total										4081	370	105	75	313	88	117	518	116	78	38	6	510	24	37	245	52

ANNUAL REPORT OF CLEVELAND, OHIO. METEOROLOGICAL AND MORTALITY.

Typhoid fever furnished a large total mortality, viz.: 78 (for the calendar year 1885 it is 71), distributed as follows: May to September, inclusive, 21; the other seven months gave 57, October alone, 12. We do not suppose that the number of *cases* reported is full in this item, but the total reported is 116, commencing with August. The highest report of cases is in August, viz., 35.

This collection of facts suggests many indications in the direction of general management of diseases. The first class and the most striking is

THE SUMMER DISEASES OF CHILDREN,

as influenced by heat, whether it be solar heat alone pretty well established that many poisons, when largely diluted, become harmless, but when concentrated, produce the so-called contagious diseases, each of its kind, and the same is true of most blood-poisoning.

This is a subject, even under the present investigation, that demands our careful attention; for what we cannot entirely destroy or prevent, we should render as harmless as possible. *Ventilation dilutes until it destroys; dilution attenuates until it renders innocuous.*

1216 Willson Avenue.

MEDICAL PROGRESS.

THE TREATMENT OF GRANULAR CONJUNCTIVITIS.—In the treatment of granular conjunctivitis one of two objects is to be kept in view: either to subdue inflammation when this is already excessive; or, when it is deficient, to excite it to greater activity, so as to lead to the absorption of the morbid tissue which has been formed. For the latter purpose various chemical applications have been used, and even inoculation with gonorrhœal pus; while attempts have also been made by scarification to lead to atrophy and absorption of the granulations.

One of the most recent methods proposed for the treatment of trachoma is that described by DR. CECCHINI SETTIMO, of Modena, in the *Gazetta degli Ospitali*, Nos. 100–103, 1885. It consists in destroying the granulations mechanically and chemically, by scraping and cauterization. All the cases Settimo has seen involved the upper lid, which he turns up, protects the eyeball with cotton soaked in a solution of boric acid or smeared with an inert ointment, and scrapes out with a Volkmann's spoon as many of the granulations as possible. He checks the hæmorrhage with cotton dipped in cold water, and then practises a vigorous cauterization with pure nitrate of silver. Before doing this he pushes the lower lid against the reversed upper lid, and places between them a little cotton soaked in a solution of chloride of sodium, to protect the cornea. After the cauterization, the upper lid is well washed with the same solution, followed by a cold solution of boric acid. For the subsequent pain, he instils a solution of morphia and atropia, and applies light compresses dipped in iced water. In some cases he applies a leech or leeches, to the temple. The patient is ordered to keep the head elevated and the eye cool with applications of cold boiled rice, washing it out with boric acid solution.

The operation is contraindicated only when there is pronounced hyperæmia, in which case it is important to cure or diminish this before scraping. Settimo prefers not to use an anæsthetic, as the contraction of the palpebral muscles helps the scraping process, although this is quite painful.

The operation may be done at one sitting if the granulations are soft and not very vascular, and the infiltration is not very great; but, if the granulations are hard and cartilaginous, it is advisable, but not necessary, to make the scraping in two or three sittings, at intervals of not less than three days. Chemosis is to be combated by taking blood from the temple, by incision of the external angle as in the method of Gräfe, and by deep incisions in the conjunctiva.

Settimo has used this method, combining it with the administration of iodide of potassium in twenty cases, with the most brilliant results, and naturally recommends it very warmly for general adoption.

More recently, KRAMSZTYK, in the *Gazeta Lekarski*, has called attention to a method of treating trachoma which was originally proposed by Wicherkiewicz, and which consists in crushing the granulations between the thumb-nails of the operator, or by means of a pair of forceps. The operation is very painful; and, although it has succeeded in a number of cases, it does not appear to have any advantages over the method of Settimo, especially if the granulations are very numerous.

Both of these methods are so heroic, that surgeons must be strongly convinced of their utility and of the necessity for having recourse to them before they are likely to be generally employed. Meanwhile, it is interesting to note, that MINOR, in the *New York Medical Journal* for July 31, 1886, reports that he has had most excellent results with powdered boric acid dusted over the conjunctiva two or three times a day, or less frequently. The application causes pain lasting about thirty minutes, and a free serous discharge, which is soon followed by relief. The improvement in the conjunctiva and the clearing up of the cornea may not be very noticeable for a week, but after this time it will be apparent. Minor has found that boric acid ceases to be tolerated after three or four weeks, when some other drug must be substituted.—*Medical News*, October 2, 1886.

BACTERIUM TERMO TREATMENT.—DR. ROQUER Y. CASADESUS, of Barcelona, having a case of laryngeal and pulmonary phthisis of an advanced character, and wishing to test the value of Cantani's bacteriotherapeutics, asked Dr. Rodriguez Mendez, a well-known microbiologist, to assist him. The condition of the patient was carefully ascertained in consultation, cavities being found in both apices. There was a high temperature, also profuse sweats, diarrhœa, profuse expectoration, great dyspnœa—in fact every sign of acute pulmonary tuberculous degeneration. The patient was in the seventh month of pregnancy. A pure culture of bacterium termo was then prepared by Dr. Botey, and made use of both by means of inhalations twice a day and by intra-laryngeal applications. After a few days the patient's condition was improved, the temperature having fallen from 39° to 38 or 38.4° C. This improvement continued till labor came on. which was of a normal character, but shortly after delivery the woman's condition became alarming, and she died in twenty hours. Dr. Roquer concludes from this case that, whether the remission of temperature was or was not due to the treatment, the bacterium termo was perfectly innocuous, as Professor Cantani states it to be. Dr. Phillipovich, who has made several trials of the treatment of phthisis by the inhalation of cultures of bacterium termo, has published a paper describing the results obtained in the reports of the Odessa Medical Society. In one case the inhalations had to be stopped in consequence of the condition of the patient becoming worse, three cases died, and two were discharged. Dr. Phillipovich's observations agree in general with those of Dr. Görbersdorf, and are decidedly inconsistent with those of Professor Cantani. The expectoration did not diminish, but it was rather more easily secreted, and so the dyspnœa was less. This, however, was probably due to the action of the water and the better aeration of the lungs, rather than to the microbe. In one case the quantity of sputum was increased, and

it became more liquid and very offensive. At the necropsy in this case cavities were found containing tolerably pure cultures of bacterium termo. In none of the cases did the tubercle bacilli in the sputum disappear or even diminish, though the inhalations were continued for seven weeks. Again, no effect was produced on the temperature or sweats, and in all the patients there was noted a greater or less loss of weight. The author concludes that no beneficial effect can be looked for from the use of this method of treatment; indeed it would rather appear, from the post-mortem appearances above mentioned, that inhalations of bacterium termo may be positively hurtful to the human organism.—*Lancet*, Aug. 21, 1886.

Spina Bifida Successfully Treated.—Mr. John Kellock Barton, in reporting this case, says: Inasmuch as the treatment of spina bifida is still unsettled, any case in which a successful operation has been performed is worthy of record. So, very briefly, I will state the particulars of the following case which has been lately under my care in the Adelaide Hospital.

On July 9, Susan H., an infant 2 weeks old, was brought to the hospital by her mother, who had been attended in her confinement by Mr. Hamilton, a pupil of the Adelaide. He had noticed at the time of birth a tumor in the lumbar region, about the size of a small walnut, of a dark purple-red color. This tumor steadily increased in size, and at the time I made my first examination was the size of a small egg, or might more acurately be likened to the half of a small orange, the convex part projecting, the flat or cut surface of the orange attached to the lumbar spine. The surface of this tumor was occupied by a greyish sloughy ulceration, while the sides were of a deep purplish-red color. Fluctuation was very obscure, but pressure certainly diminished the bulk of the tumor, which regained its original size quickly when the pressure was removed. The nature of the tumor, so far as that it was a spina bifida, was pretty clear; but to make this more certain I thrust a fine hypodermic needle into it, and drew out a few drops of a perfectly colorless serum. The question of its being a spina bifida was now established, but the further and more difficult one of whether the spinal cord formed any portion of its contents remained doubtful. The fact that no paralysis existed, either of the sphincters or lower limbs, induced me to believe that this was a meningocele, and not a myelocele; but the facts of its low position and of its purple and ulcerated surface are held by authors[1] as leading to an opposite conclusion, and the result proves that the freedom from paralysis is of more diagnostic value in deciding this important point than is either the situation or the character of the tumor.

Next day, I performed the following operation, the infant being under the influence of chloroform. I cut an elliptic piece out of the centre of the tumor, thus removing all the sloughy central portion; the wall was thick, internally smooth and white, and with numerous small nerves passing into the portion removed, which were of course cut across. Very little time was lost in stopping all bleeding, which was insignificant, and then drawing together the thick purple flaps left on either side by a double row of sutures. Careful anteseptic precautions were observed, and the dressing consisted, first of all, of a dusting with iodoform, then a covering of corrosive gauze (1 in 400), secured well at its edges and round the body with an antiseptic gauze bandage. There was no elevation of temperature, and union was complete and firm in a week. No signs of any disturbance of the nervous system followed.

In ten days the infant was discharged cured. I questioned the mother as to any loss of power in the limbs, of which the child has free use. The situation of the tumor is now occupied by a puckered purple oblong swelling, about one-sixth the size of the tumor which I operated upon, and I have no doubt further contraction will go steadily on for some time.

P.S.—Since this report was written I have received information of the death of the child in a fit of convulsions. No doubt the union of the operation-wound was complete, but the convulsive attack came on too soon after the operation for us to dissociate the one from the other.—*Lancet*, October 2, 1886.

Treatment of Syphilis by Intramuscular Injections of Mercury.—Mr. J. Astley Bloxam states that over fifteen hundred patients have been treated by this method, at the Lock Hospital and elsewhere, during the past eighteen months, with the best results. The solution for injection contains 6 grains of the bichloride to the ounce of distilled water, and of this 20 drops constitute a dose. The sore generally begins to heal very promptly after one or two injections, the secondary symptoms are markedly modified, and after a course of treatment extending over a year, more or less, the patient is enabled to discontinue his attendance. Toward the latter end of the course of treatment the injections may be given less frequently, and, as a general rule, not more than from 8 to 12 grains of the perchloride are injected in all. It is undesirable to repeat the injections oftener than once a week, as otherwise salivation might be induced, and the quantity injected each time (⅓ of a grain) is found to be quite sufficient until the next time. There are several advantages attending this method of exhibiting mercury. In the first instance, it is only necessary to see the patient once a week, when sufficient mercury is injected to last until the following week; secondly, salivation is not produced, as was apt to happen when the patient continued to take mercury for a whole week away from the supervision of his medical attendant; thirdly, the gastric derangements which are so apt to follow the administration of mercury by the mouth are by this means avoided; lastly, the ease and certainty of the administration, which enable the surgeon to do his own dispensing with a minimum of trouble. A little quinine is generally given during the course as a tonic, but no other form of mercury is administered. The injections are made preferable deep into the muscular mass of the glutei; the pain following is slight and soon passes away, and there is no danger of an abscess. It is desirable that the

[1] Dictionary of Practical Surgery, vol. ii., p. 470.

patient should not take active exercise immediately after the injection, as it has been noticed that blood may be effused at the point of injection, giving rise to the sensation of a severe bruise of the part, which lasts for a few days. The same effect has followed the puncture of a large vessel, but in any case the result is only transient, and disappears after the lapse of a few days.—*Medical Record*, October 9, 1886.

LOCAL ANÆSTHESIA FOR ELECTROLYSIS. — DR. FRANKLIN H. MARTIN, of Chicago, says: "Where it is necessary to use a very strong current of electricity for purposes of electrolysis, or any other purpose, and a reliable means of measuring the current, other than by the sensations of the patient, is at hand, it is very desirable, oftentimes, to have some means of producing anæsthesia. Especially is this the case with women who have been brought to an anæmic and nervous condition from menorrhagia coincident with a fibroid growth of the uterus. In these cases where electro-puncture is used as a means of removing the growth, or even where the somewhat milder electrolitic current is employed for the purpose of causing absorption of inflammatory exudates, there is a very disagreeable burning sensation experienced at the positive sponge electrode. By utilizing the properties of the galvanic current, discovered by Haertner, viz., the direct transference by the galvanic-current of particles in solution through permeable bodies, in a direction from the positive to the negative pole of the battery (the *cataphoric* action of Du Bois-Raymond), a very satisfactory condition of local anæsthesia can be accomplished. The method adopted is as follows: Before applying the positive sponge electrode to the surface moisten the sponge with a ¼ of 1 per cent. solution of muriate of cocaine. As the current is turned on, it will be found that the absorption of sufficient amount of the cocaine is immediately promoted to produce a complete state of anæsthesia of the surface beneath the electrode. This, of course, does not affect the point of application of the negative pole—the point of introduction of the needle. Cocaine can still further be utilized here by injecting hypodermatically a small quantity of the aqueous solution at the point of introduction of the needle through the skin, or by applying a solution of the oleate upon the mucous membrane of the vagina or uterus, if the needle is introduced in this location. By bearing these simple facts in mind, electrolysis for fibroid tumor can be made familiar without the necessity of administering a general anæsthetic."—*Medical Record*, October 9, 1886.

SALOL, A NEW ANTI-RHEUMATIC AND ANTISEPTIC. —DR. SABLI has discovered a new compound in which salicylic acid combines with phenol, to which he has given the name of salol. It is a white powder, tasteless, with a slight aromatic smell, insoluble in water, but soluble in alcohol. The author made several experiments on animals with the drug, and found that the total quantity given with the food could be detected in the urine. Decomposition takes place within the body, through the influence of the pancreatic juice, when the drug passes through the stomach unchanged, which may account for the absence of nausea and vomiting. Sabli did not encounter any unpleasant symptoms with 4 grammes (3j) daily, and he himself took as much as eight grammes (3ij) in one day, without experiencing any noises in the ears. It did cause noises in the ears, however, in some patients, but not to the same degree as salicylate of sodium. Under the administration of salol the urine becomes dark, as it does when carbolic acid is given.

The author has given salol in all rheumatic affections, and has attained, at least, the same results as he would have with salicylate of sodium; if anything, the fever seemed to subside more rapidly under the former. A case of chronic urticaria which had resisted all other treatment was rapidly cured with salol, as were also several cases of orbital neuralgia. Salol, in 2-gramme (gr. xxx) doses, three to four times daily, is a powerful antiseptic. In phthisis it is better to begin with small doses (gr. vijss). The author recommends it in diabetes, and, on account of its antiseptic qualities in diarrhœa, typhoid fever, cholera, and cystitis, and as a surgical dressing instead of iodoform. He has had a good result with it in one case of ozæna. It can be used locally in gonorrhœa. To the alcoholic solution some water may be added and an emulsion is thus formed.—*New York Medical Journal*, Sept. 11, 1886.

EXPOSURE TO THE SUN IN CHRONIC HYDROCEPHALUS IN CHILDREN.—This means of treatment has been rarely tried, or even mentioned by writers on pediatrics. Locatelli, of Milan, reports one case which was thus cured, and Nicita of the same city reports three cases. Several of the ancient and early writers expressed the opinion that heat applied to the head would effect a cure. Somma has treated five cases with the following results:

1. *Hydrocephalus Externus.*—Treated with solution of phosphate of lime, vesicants upon the scalp, exposure to the sun for periods of fifteen or twenty minutes. Cured.

2. *Hydrocephalus Internus.*—Iodide of potash, solution of phosphate of lime, exposure to the sun. Cured.

3. *Hydrocephalus Internus;* also paresis of the lower extremities and pulmonary catarrh. Exposure to the sun, with improvement for five months, finally death from broncho-pneumonia.

4. *Hydrocephalus Externus.*—Exposure to the sun. Cure after three months.

5. *Hydrocephalus Externus of Syphilitic Origin.* —Iodide of potash and calomel, acid calcium phosphate and exposure to the sun. Cured.

The following method of exposure to the sun was followed:

An attendant held the child with uncovered head, the occiput being turned toward the solar rays, the position being unchanged for half an hour or less. After four or five days the duration of exposure was increased to forty or fifty minutes. Of course this method did not apply during the cold of winter or the excesssive heat of summer.—*Archives of Pediatrics*, April, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 23, 1886.

FEEDING INFANTS—AN IMPORTANT ERROR.

At the recent meeting of the British Medical Association in Brighton, DR. R. P. B. TAAFFE, President of the Section on Public Medicine, in his opening Address to his Section discussed several topics of much interest. After mentioning the efforts that had been made to destroy or abate the coal-smoke and to purify gas, he showed from the vital statistics furnished by the Registrar-General that the annual death-rate in England and Wales during the decennial period ending 1880 was 21.27, instead of 22.4, which it had been for the three preceding decades. He showed further that for the last half decade ending with 1885 this mean death-rate had fallen to 19.3 per 1,000. The details indicated that the greater part of the improvement had resulted from the diminished mortality in childhood caused by improvements in the sanitary conditions affecting the poorer classes.

Following the discussion of general vital statistics, Dr. Taaffe presented some important facts concerning the mortality from infantile diarrhœa. Of 582 deaths from diarrhœa at all ages recorded by himself in seven years, 526 occurred among children under five years of age, and of the latter 433 were children under one year. Of 441 children who died under five years, concerning whose feeding special inquiries were made, 49 only were nursed wholly by their mothers, while 392 had been "fed more or less artificially." Of these, 260 were fed on milk from the bottle; 40 were nursed by the mothers and fed also upon artificial foods; 64 were fed partly on milk and partly on artificial foods; and the remaining 21 were fed on artificial foods, such as oatmeal, arrowroot, corn flour, baked flour, Ridge's and Mifflin's foods, tea-cakes, tops and bottoms, bread-sop, and beef-tea. Dr. Taaffe, after condemning the practice of either feeding or nursing infants too frequently, gives the following directions: "No infant at the breast, or who is being brought up by hand, should be fed more than once in *three* hours during the day and twice in the night; after five months old every *four* hours in the day and twice in the night. If brought up by hand, the food should consist only of milk and water, to be sucked from a bottle. For the first day or two (after birth) the proportions should be—milk one-fourth, water three-fourths. After the first day or two, and up to two months old, milk one-third, water two-thirds; from two to four months old, milk and water in equal parts; from four to seven months old, milk two-thirds and water one-third. A dessert-spoonful of sugar of milk may be added to each bottle."

We have copied these directions from the otherwise excellent address of Dr. Taaffe, not because they are new, for they are substantially the same as have been given by many writers, and which mothers and nurses have endeavored to execute in their care of infants for half a century at least, but because careful clinical observation over a wide field of practice long since taught us that they contained an error of very great practical importance—namely, the excessive *dilution* of the food of infants. Our attention was attracted to this subject at an early period, and more than thirty years since, in addition to careful clinical observation, we prosecuted investigations, chemical and microscopical, concerning the mother's milk in healthy uncomplicated lactation and also when complicated with menstruation and pregnancy.[1] In the same connection we prosecuted inquiries concerning the effects of various degrees of condensation and of dilution of pure milk of the cow as food for infants. The analyses of the milk of three healthy mothers with healthy nursing children, one in the third month of lactation, one in the fourth and one in the seventh, gave a mean composition in 1,000 parts: Water, 878.07; casein, 49.78; butter or oil, 35.53; sugar and extractives, 32.15; and salts or inorganic matter 4.31. In other words, the proportion of assimilative or nutritive matter to the water, was little more than 1 to 7. According to the analyses of Payen,[2] good cow's milk contains in 1,000 parts: Water, 864.0; casein and lacto-protein, 43.0; butter or oils, 37.0; sugar or lactine, 52.0; and salts or inorganic matter 4.0; being in the proportion of 1 part of assimilative material to 6.3 parts of water. It is thus seen that

[1] See Transactions of the American Medical Association, vol. ix, p. 417, 1856.
[2] See Flint's Physiology of Man, Volume on Alimentation, etc., p 78.

the excess of assimilative or nutritive material in the cow's milk is less than four-tenths of one part, which is less than the differences often found between different specimens of healthy human milk.

Suppose, in applying the rule given by Dr. Taaffe, we commence the day feeding of a child under two months old at 6 A.M. and end it 9 P.M., and add two feedings for the night, it would allow eight feedings every twenty-four hours. If we allow four ounces for each feeding, which is a large allowance for an infant of less than two months, it would get thirty-two ounces per day of twenty-four hours; four ounces of which would be nutritive matter and twenty-eight ounces water if it were good mother's milk, and a fraction more if it were good cow's milk. If we may suppose the infant able to appropriate the whole four ounces in the twenty-four hours and lose in the same time by eliminations or waste two ounces, it would grow, or gain in weight, two ounces per day, or at the rate of nearly four pounds per month. But if we comply with the rule and make the milk two parts water to one of milk and still allow the infant four ounces each feeding, or thirty-two ounces per day, instead of four ounces of nutritive material and twenty-eight of water, it would have received only 1⅓ ounce of nutritive matter to 30⅔ ounces of water; and if, as in the former supposition, the infant lost by elimination or waste two ounces per day, instead of gaining an aggregate of near four pounds per month it would actually have lost one pound and a quarter during that time. And such has been the actual tendency of every attempt we have seen made to literally adhere to the rules given in the Address mentioned, although many such have come under our observation during the preceding thirty years. The suggestion of Dr. Taaffe that a dessertspoonful of sugar of milk might be added to each bottle of the diluted milk would only tend to restore the natural proportion of this ingredient, while the proportion of caseine, butter and salts would be largely deficient, and the water in proportionate excess. An infant thus fed with milk containing only one-half or one third of the proportion of solid or nutritive constituents belonging in the natural mother's milk, soon begins to be restless and in less than an hour after feeding is fretting and crying for more. If the mother or nurse yields to its demands its stomach is kept almost constantly filled with the attenuated fluid, which either soon encourages the rejection of much of it by vomiting or diarrhœa, or if absorbed renders the watery element of the blood greatly in excess, and two or three months suffices to bring the child to a state of complete emaciation, the mother and nurse worn out with the fruitless effort to pacify the child's almost incessant worrying; or with less patience they have obtained rest for an hour or two at a time by adding either the anæsthetic effect of a few drops of brandy or whiskey to the child's milk, or ample doses of opiates in the form of cordials and soothing syrups.

We have seen scores of these little sufferers soon restored to the condition of quiet, cheerful, thriving babies by simply insisting on their being fed with milk containing the full natural proportion of solid elements, and sometimes slightly increasing these by either boiling enough to evaporate some of the water, or by adding a very little wheat flour and a few grains of salt while the milk was boiling. The child thus getting enough nutritious material to supply the demands of its tissues in a less bulk of water yet easy of absorption and assimilation, avoiding over-distension of the stomach, takes long quiet sleeps, and grows fat and happy.

HYSTERICAL SOMNOLENCE AND TRANCE.

The *London News* contains the history of a very curious case in the Salpetrière Hospital of Paris. The patient, Eudoxie Hedouin, a woman of 51 years of age, has recently had two periods of morbid somnolence, one of fifty days, the second of eighteen days. This, however, seems to be nothing new for her. As a child she was hysterical; and at the age of 22 she entered La Salpetrière to be treated for paralysis, doubtless of hysterical origin, and it is said that she has not yet recovered from this. In May, 1875, she fell into a state of trance which lasted only two days. On May 12, however, she went into another trance from which she did not awaken until May 27. On the next day she took a full meal, laughed violently, and then became delirious, which scarcely leaves a doubt that her trouble was purely hysterical in origin.

In the last state of trance, lasting eighteen days, Dr. Voisin ascertained that she was not unconscious to her surroundings, and that she could be made to obey a command. He placed a paper containing a drug on the skin of the patient without saying anything; no effect followed. This being removed, a piece of folded paper, empty, was placed on the skin, and the remark made that she would surely vomit. Ten minutes afterwards she vomited. In some respects this case resembles one of hypnotism. She was given a glass which she was told was filled with champagne, though it contained nothing; she eagerly drank the supposed wine. A piece of aloes was given her in place of sugar, and she scarcely seemed to detect the difference.

Trance has been defined as a condition of the nervous system characterized by general muscular immobility, complete mental inertia, and insensibility to surroundings. This definition cannot be accepted, however, as there is often some degree of muscular mobility, the mind is not always completely inert, and the statements of the patients show that they are not by any means always insensible to surroundings. Thus, in the case of the hystero-cataleptic girl in Nebraska, (reported in Pepper's System of Medicine, Vol. V, page 344) she said that she was conscious during the whole time of her trance of seventy days, but that she could not move a muscle, although she exerted her will to the utmost to show that she was conscious. The fact is, it is very difficult in all cases to draw a hard and fast line between trance and a prolonged somnolence, since the same patient may be affected in slightly different ways at different times. Two years ago Dr. Charles L. Dana reported fifty cases of prolonged morbid somnolence. Briquet very properly draws a distinction between prolonged hysteria (or somnolence) and lethargy, as the patient may have periods of sleep within the lethargy. A most interesting case is reported in the *British Medical Journal*, of December 12, 1885, by P. J. Cremen, under the name morbid somnolence. The patient seemed to be in a deep sleep from which he could not be aroused, or as one under the influence of an anæsthetic; and he could not be awakened. At first he was analgesic all over the body, but sensibility returned, as he was able to eat when bread was put into his hand, and he was seen to eat in the somnolent state with the eyes closed. A strong magneto-electric current would arouse him. When told to do so he could walk, but only in a straight line, and he took no pains to avoid obstacles. This somnolent state could be induced at will by pressing on the closed eyes for about two minutes. A very interesting case is recorded in the Transactions of the Royal Society of Edinburgh (Vol. VIII). She remained in a somnolent state from July 1 to August 8. She was bled, blistered and bathed in order to awaken her, but all to no purpose. After having slept for seven days she showed signs of wanting food. She was deaf while in this state until four days before she recovered. When she awakened fully she said that she had no knowledge of what had occurred, even of the blistering and bleeding. In this case also there was some degree of paralysis, which was probably hysterical.

According to Rosenthal, lethargy is never fatal when complicated with hysteria, but uncomplicated with this affection it is rapidly fatal. He records a case in which a young woman remained in this state for thirty hours, and afterwards enjoyed good health. The attack was induced by violent emotional excitement. This case will not fall at all within those cases of morbid somnolence of which we have spoken, but it shows to what conditions an excitable, nervous system may subject a person.

THE INTERNATIONAL MEDICAL CONGRESS.

The Executive Committee of this body. to whom has been entrusted the work of organizing and developing the interest of the profession in making this Congress fully equal to any previously held, have lately shown their interest in the work by sacrificing private engagements, and at their own expense travelling from distant points to meet in general session in Pittsburgh. The meeting was fully attended, and the various reports of the sub-committees and the extensive correspondence of its chairman all showed the advance made in the perfect organization of the Congress. All the Sections of the Congress reported highly satisfactory progress in the appointment of Sectional officers, and the promise of original papers of a high class. The various officers of the Sections, including members of the Council, now exceed three hundred and seventy-five well-known members of the medical profession in the United States. Numerous appointments to Sections have also been accepted by prominent members of the profession in Great Britain, France, Belgium, Holland, Germany, Brazil, and other countries; so that there can now be no doubt as to the international character of the Congress.

Among those recently accepting office as Vice-Presidents of the Congress we note Sir B. Walter Foster, President of the Council of the British Medical Association; Mr. Ernest Hart, Editor of the Journal of the British Medical Association; Sir Thomas Longmore, Surgeon-General (retired) of the British Army; Sir Joseph Fayrer, Surgeon-General of India; Mr. John Eric Erichsen, Sir Dyce Duckworth, and Mr. Jonathan Hutchinson, of England; Professor Dujardin-Beaumetz, M. Bouchut, M. Cadet de Gassicourt, and M. Grancher, of France; Professor Moncorvo, of Rio de Janeiro; M. Servais, of Belgium; Alfred Vogel, of Germany, with many others equally well-known.

As the Executive Committee will continue to quietly prosecute its work, with the sole object of maintaining the honor of the profession in the United States, and making good the invitation given and accepted in 1884 at Copenhagen, and in 1886 at Brighton, we anticipate a result in every way creditable to

our countrymen, and a proper compliment to our guests. Arrangements are under consideration for reduced fares on steamships and railways, and in hotels; and we feel assured that not only will our visitors find all arrangements thoroughly perfected for their pleasure and comfort, but an opportunity to visit this new and extensive country at greatly reduced rates of travel, and under the most favorable circumstances.

SOCIETY PROCEEDINGS.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, September 17, 1886.

THE PRESIDENT, DANIEL T. NELSON, M.D., IN THE CHAIR.

W. W. JAGGARD, M.D., EDITOR.

DR. JAMES H. ETHERIDGE read a paper entitled

REPORT OF A CASE OF SUPRA-VAGINAL AMPUTATION OF THE PREGNANT UTERUS, COMPLICATING A MULTILOCULAR FIBROID TUMOR.

Mrs. A. B., aged 34 years, married several years, no children, first experienced uterine symptoms some four years ago, which Dr. Knox, her medical attendant, recognized as due to a uterine retroversion, and treated with a pessary for six months. On March 10, 1884, he was again called to her, and found the uterus again retroverted. "This time, however," he writes, "it was apparently fixed in the pelvis; the *os tincæ* was caught firmly behind the pubes, and in Douglas's *cul-de-sac* was a firm sensitive mass that seemed to be more than the *fundus uteri*. There was also considerable abdominal tenderness, fever, and nausea. It was difficult to diagnosticate between cellulitis and simple retroversion with impaction. Careful manipulation, however, in Sims's position, corrected the displacement with complete relief of the distressing symptoms. Hot fomentations and vaginal douches aborted the threatening cellulitis. Two days thereafter, on careful examination, I detected a sub-peritoneal myoma on the left posterior aspect of the fundus. It was about half the size of an unimpregnated uterus. This accounted for the tight impaction of the retroverted organ.

"A pessary was again introduced, and 20 minim doses fluid extract of ergot, three times a day, ordered. The drug was faithfully taken for about twelve months. During that time a second fibroid appeared upon the right lower and anterior surface of the womb. These tumors steadily enlarged until the uterus was lifted entirely out of the pelvis. Excepting the results of mechanical pressure, the patient's health was excellent, and menstruation was undisturbed.

"April, 1885, the ergot was discontinued. Owing to the sub-peritoneal character of the fibromata their growth was uninfluenced by the drug."

The growth of the tumor in the last two years has been slow but progressive. In the last six months it caused no special symptoms beyond vague supra-pubic pains at times.

In May, 1886, thirteen months after the stopping of the use of ergot, Dr. Knox was again summoned to attend her for a distressing nausea. At the same time the menses, which had never been excessive, ceased. Mammary changes supervened.

In the ensuing three months the tumor grew rapidly. To Dr. Knox must be ascribed diagnostic skill of the highest order in determining the presence of pregnancy in such a mystifying condition of things. He decided that she must be pregnant, and awaited the expiration of the first three months to produce an abortion, hoping thereby to induce involution to such an extent as, at least, to arrest the rapid increase in the growth of the tumor. Accordingly, on Aug. 1, 1886, when the three months had expired, he introduced a sound into the uterus four inches. Its withdrawal was followed by a small amount of blood, the nausea and vomiting ceased, and the mammary symptoms disappeared. Nothing further ever followed indicating the previous existence of pregnancy or an abortion, and the conclusion was reached that conception had not occurred.

The rapid encroachment on the abdominal organs was progressively killing her. Her strength had greatly diminished. For six months she gradually emaciated. Her sufferings from the pressure of the tumor were great, and eventually led to her giving up and remaining in bed nearly all the time because she thus experienced the most comfort. In addition she was easily put out of breath by exertion.

Forty hours before the operation she had a free purge, and twenty hours later she went to the Presbyterian Hospital to remain overnight, to receive a bichloride of mercury bath and to have her pubes shaved.

At the time of the operation she presented the following measurements:

1. Girth at the umbilicus, 31 inches.
2. From ensiform cartilage to umbilicus, 7 inches.
3. From umbilicus to symphysis pubis, 6.5 inches.
4. From either ant. sup. spin. proc. to umbilicus, 7 inches.

From external examination it was found that the tumor extended from the right iliac fossa across the abdominal cavity in a straight line to the spleen. Its length was, apparently, double or treble its width. It was freely movable, free from adhesions, and solid. It presented great tenderness in the right iliac fossa.

Per vaginam the *cervix uteri* was found very high up in the left iliac fossa and the *fundus uteri* was apparently thrust into the right iliac region. The whole tumor moved with the uterus. A very small resiliency offered to conjoined manipulation led me to think that I had to do with a *fibro-cystic tumor of the uterus*. The sound entered the uterus four inches and seemed to pass towards the umbilicus.

Just before commencing the operation a sound introduced into the bladder showed that this viscus was not enlarged by being drawn up out of the pelvis by the growth of the tumor.

At the same time, the sound was introduced into

the uterine cavity and entered only four inches. It had to be bent at an obtuse angle to make it engage in the cervical canal. Its introduction was attended with a small hæmorrhage, which subsequently was the innocent cause of severe but brief alarm.

The instruments used in the operation were dipped in a five per centum solution of carbolic acid, and subsequently kept in a two per centum solution of the same agent when not in actual use. No spray was used. The sponges were antisepticised with carbolic acid. The details of the operation were simplicity itself. The incision began one inch above the umbilicus and extended down to within an inch and a half above the pubes. It was carried to the left of the umbilicus and measured six inches. Upon exposing the tumor it was found wholly free from adhesions. It extended to, and pressed upwards, the spleen. It was oblong, its length being about treble its width. It was situated obliquely across the whole abdominal cavity. Its upper end was easily turned out of the abdomen, and the whole mass was lifted out of its bed. Its smooth, red surface nowhere indicated the outline of the uterus. Its lower end seemed to be one solid mass of pedicle extending completely across the whole inlet of the pelvis from side to side. The laminæ of the right broad ligament were separated in the most conspicuous manner that I ever beheld. The two ovaries were attached to the mass on a level with the umbilicus, having been lifted completely up into the abdominal cavity.

After buttonholing the capsule of the tumor as low down as was practicable, it was peeled off as far as the finger could reach right and left, and ligatured in small masses in two places an inch or more apart and then divided between the ligatures. In this way all of the capsule that could be secured in ligatures and cut was soon treated, and the hæmorrhage from the operation was barely worth mentioning. The right uterine artery, which was much enlarged, was torn across and quickly secured. All of the spermatic and uterine arteries were secured with double ligatures of No. 14 silk. Thus the apparently large pedicle was much reduced in size and was found to be about equal to the normal *corpus uteri*.

Around this mass was placed a Kœberlé's *serre-nœud*, which was properly tightened, and the tumor excised. Small vessels were then secured. The clamp was then slowly loosened and the vessels of the stump were tied.

The cervical canal was conspicuously visible in the centre of the stump. It was drawn up by a vulsellum as tautly as possible and excised for the length of at least one inch. The piece removed was cone-shaped, with its base upwards. Six stitches were then used, from side to side, placed so that when tightened the peritoneum was accurately brought together over the top of the stump. They were tied as tightly as they could be drawn. All further bleeding was attended to *secundam artem*, and the abdomen closed with nineteen stitches. The initial incision was made at 10:30 A.M., the stitches were begun at 11:42 A.M., and the operation was completed at 12:01 P.M.

She rallied from the operation in a few hours. For a period of four days afterwards she had a most intractable vomiting. After feeding by the rectum and permitting absolutely nothing to pass her lips, this troublesome symptom slowly diminished and gradually disappeared, but not until she had acquired a slightly pinched condition of the *alæ nasi*, which brandy caused to disappear. On the third day an offensive odor proceeded from the vagina. A carbolized solution permanently corrected it. It must have arisen from decomposition of the small amount of blood provoked by the introduction of the uterine sound.

Thereafter naught especially eventful occurred to direct attention to, excepting the following points:

1st. The patient never had an alvine dejection after the operation. Flatus passed only after the colonic distension permitted it, through a rectal tube. Repeated efforts were made to secure defecation, without result.

2d. At no time after the operation did she have a chill or sweats. The days were very hot and her greatest comfort was in being gently fanned and in dabbling her hands in a bowl of water placed at her side.

The following record of pulse, temperature and respiration was kept till the death of the patient, which occurred eleven days and nineteen hours post operation.

August 8.—5 P.M., P. 128, T. 101°, R. 18; 8 P.M., P. 120, T. 100.8°, R. 16; 10.45 P.M., P. 120, T. 100.2°, R. 20.

August 9.—8.45 A.M., P. 110°, T. 99.6, R. 20; 12.30 P.M., P. 116, T. 100°, R. 16; 8 P.M., P. 116, T. 100.3°, R. 24.

August 10.—10 A.M., P. 118, T. 100; 4 P.M., P. 112, T. 99.3°, R. 26; 8 P.M., P. 110, T. 99.5°, R. 22.

August 11.—8 A.M., P. 124, T. 100.5°, R. 22; 2 P.M. P. 110, T. 99.7°, R. 18; 8.30 P.M., P. 128, T. 100.7°.

August 12.—8 A.M., P. 114, T. 99.5°, R. 18; 2 P.M., P. 112, T. 98.7°, R. 17; 8 P.M., P. 114, T. 99.5°, R. 14.

August 13.—7 A.M., P. 114, T. 99.8°, R. 14; 4 P.M., P. 108, T. 99.6°, R. 14; 8 P.M., P. 114, T. 100.3°, R. 14.

August 14.—7 A.M., P. 112, T. 100.9°, R. 14; 2 P.M., P. 112, T. 99.8°, R. 16.; 8 P.M., P. 116, T. 99.5°, R. 18.

August 15.—8 A.M., P. 120, T. 99°, R. 16; 4 P.M., P. 116, T. 99.5°, R. 16; 8 P.M., P. 114, T. 99.4°, R. 16.

August 16.—8 A.M., P. 112, T. 100°, R. 14; 4 P.M., P. 108, T. 100.6°, R. 14; 10 P.M., P. 112, T. 100°, R. 16.

August 17.—8 A.M., P. 110, T. 99.4°, R. 16; 4 P.M., P. 120, T. 99.6°, R. 16; 8 P.M., P. 120, T. 99.8°, R. 16.

August 18.—6 A.M., P. 118, T. 101.5°; 12:30 P.M., P. 114, T. 101.6°, R. 14; 8 P.M., P. 124, T. 102.8°, R. 18; 10 P.M., T. 102°; 11:50 P.M., T. 103.2°.

August 19.—1 A.M., T. 102°. Death at 6:45 A.M.

The autopsy was made thirty-two hours after death, and revealed a pelvis filled with fluid consisting of blood and pus. The small intestines were agglutina-

ted over the pelvic inlet, almost hermetically. The surfaces of the small intestines turned towards the cavity of the pelvis presented a condition of sphacelus approaching demarcation. The pelvic cellular tissue was completely honeycombed with pus cavities. The stump presented a shrunken appearance, as though all of the stitches had been loosened, yet no pelvic fluid had found its way into the vagina through the cervical canal. The patient had succumbed to septicæmia. I regret that I did not drain.

Examination of the tumor revealed the fact that it was a multilocular fibroma, and that it grew from the anterior wall of the *corpus uteri* The cavity of the uterus was found on a level with the umbilicus and contained a three months fœtus in unruptured membranes, evidently alive up to the time of operation. The cervical canal was 5½ inches long, which fact explains the immunity of the membranes from puncture by the introduction of a sound only four inches. The canal resembled the letter U, with its legs pulled apart, starting from the extreme left iliac fossa at the *os uteri* it passed towards the umbilicus two inches, and was then deflected at an obtuse angle towards the spleen.

Upon laying open the uterine cavity it was found to be in appearance a cavernous hollowing out of the posterior surface of the tumor. In front of it was nearly the whole width of the tumor. Its posterior boundary was a wall of uterine tissue thinner than the normal, unimpregnated posterior uterine wall. It was situated in the middle of the tumor.

The membranes presented a leaden grayish appearance, and were filled with fluid, its smooth undulating surface, in contrast with its nodular surroundings, looking not unlike the surface of "The Devil's Punch Bowl" on the top of Mt. Mangerton.

The fœtus was a male. Its cord was seven inches long and was normally attached.

Microscopic examination of the tumor by Dr. Ochsner shows its character to be purely *fibromatous*. Its weight was about ten pounds.

Remarks.—The removal of fibroid tumors which are slowly but surely killing patients has now passed into the category of recognized and justifiable operations. The astonishing successes of Keith in removing them are sufficient guaranty of justification for removing such growths under proper conditions.

But the complication of large fibrous tumors of the uterus with pregnancy presents the gravest possible condition for the surgeon's consideration. Conception seemed to give an impulse to the rapidity of the growth of the tumor under consideration that was very surprising. The arrest of its growth or its removal were the two horns of the dilemma. Against the production of abortion there are serious objections. It is followed by disproportionately great dangers and cannot possibly lessen the size of the growth materially. The possibility of uncontrollable hæmorrhage from the seat of the placenta on a non-contractile mass of tumor must be faced in producing an abortion. In addition the dangers of septicæmia from puerperal disintegration of the tumor are not to be forgotten. While running the two risks of hæmorrhage and septicæmia from producing an abortion there is the very great possibility of avoiding a future extirpation of the whole mass by inducing a cessation of growth of the tumor, or even possibly by inducing a greater or lesser involution of the growth. The examination of the tumor shows conclusively that the uterus could never have extruded the fœtus and its adnexa through the elongated cervical canal because of the inutility of the uterine muscular fibre through fibromatous degeneration. Consequently abortion would in all probability have proven fatal through septicæmia. I am thoroughly convinced that the patient could not have lived many weeks longer without the death of the fœtus, when the overwhelming disaster of fatal sepsis would have speedily ensued without any compensatory explanation short of an autopsy, since the idea of pregnancy was about abandoned because abortion failed to occur; and the non-appearance of the fœtus *per vias naturales* would afford no satisfactory evidence of what had occurred, but quite to the contrary would have rendered a mysterious case much more mysterious. In such an event, *sine autopsia*, the pathological reasoning would have been that spontaneous necrosis of the fibroma had occurred and septicæmia followed.

References.—Hegar and Kaltenbach report six cases in the third edition of their "*Operative Gynecology*," 1886, as follows:

Author.	Date.	Time of pregnancy.	Character of Tumor.	Result.
Kaltenbach	Mch. 2, 1880	Fifth month	Myoma	Recovery
Wasseige	Mch. 18, 1880	Fifth month	Myoma	Death 6th day
Nieberding	May 10, 1882	Fourth month	———	Death 40 hours P. O.
Schroeder	June 21, 1884	Third month	Myoma	Recovery
Schroeder	June 10, 1884	Third month	———	Recovery
Walter	1883	Fourth month	Colloid	Death 9th day

Case 7.—Dr. H. R. Storer amputated the pregnant uterus, in a primipara, æt. 37 years, after three days of labor had passed, for a fibro-cystic tumor. The pedicle was constricted by a double metallic ligature and kept outside. The patient died in seventy hours of septicæmia. (*Journal of Gynecological Society of Boston*, Oct., 1869, p. 223.)

Case 8.—Prof. S. Tarnier, Neuilly, France, on February 24, 1879, removed the uterus from a primipara æt. 33 years for a fibrous tumor of the uterus, after the patient had been in labor seven days. Condition of patient at the time of operation, very unfavorable. The fœtus was putrid, gas in the uterus having been found. Pedicle was kept out with a metallic pin and metallic ligature. Patient died of septicæmia on third day. (*Annales de Gynécologie*, Aug., 1879, p. 81.)

Case 9.—Dr. Zweifel, of Erlangen, Germany, on July 31, 1880, removed, from a primipara æt. 37 years, the uterus, several hours after labor began, because of a fibroid tumor in the cervix. Patient died on the sixth day of septicæmia. The pedicle was tied with double silk ligature. (*Archiv für Gynäkologie*, B. 17, H. 3.)

Case 10.—Prof. Cataliatti, of Palermo, Italy, on October 28, 1880, removed the pregnant uterus from a primipara æt. 41 years for an interstitial fibroid of the posterior uterine wall soon after the inception of labor. The pedicle was kept outside with wire ligature and transfixed with metallic pin. Recovery fol-

lowed. (*Bulletin dell. Academia di Medicina di Palermo*, 1880.)

Case 11.—Dr. L. Prochownick, of Hamburg, Germany, performed hysterectomy, April 21, 1881, on a primipara æt. 40 years, at seventh month, about twenty-four hours after the discharge of the liquor amnii, for a fibromyoma of the uterus impacted in the pelvis. The pedicle was held out of the abdomen with Péan's constrictor, two long pins and stitched to the lower angle of the wound. The patient died in sixty hours p. o. from septicæmia. (*Deutsche Medicinische Wochenschrift*, No. 40, 1882.)

Case 12.—Dr. Fochier, Lyons, France, on November 23, 1882, amputated the uterus at term, after the patient had been in labor three days, for a fibroid in the uterine cervix. Recovery followed. It was her fourteenth pregnancy. The pedicle was kept out in the lower angle of the wound. (*Lyon Méd.*, May 20, 1883.)

Case 13.— Dr. M. Hanfield Jones reported in *Transactions of the Obstetrical Society of London*, vol. xvii, 1886, the case of a woman at term in whom delivery was impossible because of a subperitoneal fibroid in the true pelvis. The entire uterus and its appendages with the tumor was removed and the cervix clamped. The patient died of peritonitis on the third day.

Case 14.—Amputation of the pregnant uterus at term, by Dr. M. Hofmeier, for fibroid tumor in the pelvic cavity. Reported by Dr. P. F. Mundé in the *American Journal of Obstetrics*, Sept., 1886, vol. xix, p. 905. Mother and child both saved.

Case 15.—Large pediculated subperitoneal fibroid. Pregnancy, two months. Removal of tumor, uterus and ovaries. Result not stated. Operator, Meredith. Reported in the *American Journal of Obstetrics*, Sept., 1886, p. 923.

Dr. J. S. Knox said: I want to call attention, in the case reported by Dr. Etheridge, to the rapid development of myomata after the establishment of pregnancy. I have two other cases of uterine fibroid that came under my care about the same time as the patient reported by Dr. Etheridge and who were treated similarly, and in whom also menstruation was not disturbed. They are still in perfect health, and the probabilities are that when they die it will be of some other disease; one being a widow, the other an unmarried woman. The growth of this myoma before us was slow but persistent, in spite of the use of ergot, and until the time the menses ceased and pregnancy commenced, the woman enjoyed perfect health, all unfavorable symptoms appearing within three months preceding operation. Another fact I would like to call attention to is the danger of abortion in such cases. With the consent of Dr. Etheridge, I delayed any operative procedures until the woman had reached the full three months of pregnancy, that I might produce an abortion; I introduced the sound with great difficulty, and passed it up full four inches; it produced considerable hæmorrhage, which continued for about three days. The nausea ceased immediately and the patient noticed a diminution of the size of the breasts and lost the sense of fulness of the abdomen. Her appetite returned and she took a great deal of nourishment, which improved her physical condition very much. A strange result, seeing the abortion was not accomplished. In opening the tumor after its removal, I was satisfied that if I had produced the abortion the woman would probably have died of sepsis or hæmorrhage. There was no possible outlet for the contents of the uterus, and I think it was a fortunate thing that we did not succeed in accomplishing the abortion. Under similar circumstances I would prefer hysterectomy with its risks to abortion with its risks.

Dr. E. C. Dudley said: Notwithstanding the general principle established by ovariotomy that the extra-peritoneal method is in itself dangerous, and that it should consequently be avoided whenever perfect intra-peritoneal hemostasis can be secured, and notwithstanding the fact that this general principle should stand for all operations involving the removal of abdominal tumors, yet the best statistics of the intra-peritoneal method in hysterectomy show a mortality of 30 or 40 per cent., while Keith and Bantock, with the clamp or *serre-nœud*, have a mortality of only 10 or 15 per cent. Now if it be true that certain dangers are inseparable from the extra-peritoneal method, it follows that part of this 10 or 15 per cent. of mortality must be in consequence of it, and that the statistics might still further be improved if by some means an intra-peritoneal ligature could be applied which would give the same security against hæmorrhage and permit operators to dispense with the clamp. But the dangers of the silk ligature are greater than those of the clamp because, however thoroughly applied, and however carefully the stump be stitched together, shrinkage of the stump from the escape of serum almost always occurs within a few hours, with consequent loosening of the ligatures and hæmorrhage which may be fatal at once from great loss of blood, or later from septicæmia. The indication clearly is for an elastic ligature capable of following up the shrinking stump and of securing thereby permanent hemostasis. India-rubber fulfils this indication, and if properly applied is capable of becoming readily and safely encysted. The experiments of Löwenhardt and Hallswachs, together with the numerous operations of Olshausen and others, give good evidence that the India-rubber tube when dropped into the abdomen is free from danger. It is true that certain cases have been reported in which sloughing of the pedicle has followed the application of the elastic ligature with resulting abscess, but this occurs in consequence of using a ligature of any material, so large that it cannot imbed itself in the stump, and thereby permit the surface to close over it so as to secure the prompt establishment of collateral circulation to the distal portion of the stump.

Not very long ago the question was raised whether in supra-vaginal amputation it is necessary to remove the ovaries at the same time—a question to which experience has given an affirmative answer. Péan has observed a case of catamenial hæmatocele, Hegar a case of extra-uterine pregnancy and Kaltenbach a case of distressing molimen recurring monthly in consequence of leaving the ovaries after hyste-

rectomy; therefore, unless the patient has passed the menopause, they should if possible be removed on principle.

DR. H. T. BYFORD said: I would like to ask whether such ligatures as Dr. Dudley speaks of could be prepared beforehand? (Dr. Dudley: You might prepare 300 of different lengths and select the one you want.) With such a quantity of fresh ones on hand one could undoubtedly find one to use. Schroeder's later percentages are, I believe, a little more favorable than Dr. Dudley seems to think, and enable him to claim with some degree of reason, that his intra-peritoneal method is the best.

THE PRESIDENT said: One word in relation to the remarks of Dr. Dudley concerning ligature: The shoemaker's stitch, using the silk ligature, was introduced in 1881 by Dr. Marcy, of Boston. I am not informed how many times it has been used. It comes nearer obviating the difficulties of the silk ligature, I think, than any other plan in use. His method is sewing the cervix with the shoemaker's stitch. One end of the silk ligature is carried through by a strong needle threaded at the point and mounted in a handle. This is then unthreaded and the other end threaded, bringing this through as the needle is withdrawn. In this way both ends of the suture lie in the same opening in the tissues, though running in opposite directions. Other stitches, as many as may be needed and as near together as is deemed necessary, are inserted in the same way.

This is a continuous suture, and consequently more elastic than the ordinary suture, and there is but one knot, at the termination of the suture, and if there seems to be danger from hæmorrhage a second row of sutures may be put in at right angles to the first. In the cases I have known with this suture there has been no difficulty from hæmorrhage or sepsis. The tumors were not large, and perhaps that explains the success of the method. I have never had an opportunity of trying it. It seems to me very desirable to use silk if we can to stop the hæmorrhage or oozing from the vessels. I don't exactly know Schroeder's plan of using the double row of stitches, whether it is substantially this method or not. One thing further which Dr. Merriman has touched upon and which we should all profit by, viz.: that when there is evidence of sepsis slight or considerable we should open the abdominal wound. In all the autopsies I have made after these operations where sepsis has been the cause of death, I believe they could have been saved if the wound had been opened and properly treated three or four days before the death of the patient.

DR. H. P. MERRIMAN said: I was so fortunate as to be present at Dr. Etheridge's operation. One point that he did not mention is that after the removal of the tumor and after the use of the ligatures, which he applied to each artery by itself, and not in one mass around the pedicle, the pelvis was entirely dry, so much so that when the question of a drainage-tube came up, I believe every one present said they could see no reason for its use. There was no exudation. The sponge came out hardly colored after it was placed in contact with the surface that had been denuded, and there was apparently no need of drainage, yet afterward we had oozing from this surface and the formation of bloody serum in the cavity, with septicæmia as a result. I was present at the autopsy, and am convinced that had a drainage-tube been used this patient would have recovered. I don't know but that if after eight or nine days, when the symptoms began to show septicæmia, there had been an opening of the cavity, the septic material might have been removed and the case have had a fortunate termination. The danger seems to me to come from septicæmia rather than from any direct loss of blood there may be from hæmorrhage, although I can see that there might be, even with the drainage-tube, sufficient exudation of the parts to exhaust the patient and produce a fatal termination. There was one thing that struck me with considerable interest, and I don't know what bearing it may have. She had taken ergot uninterruptedly for a year with a general improvement of her health; after this use of the ergot she became pregnant for the first time in her eight years of married life. Was it a coincidence or was there some relation between the use of ergot and pregnancy?

DR. C. T. PARKES said: I am very much interested in this discussion, as it has brought up the question of how to treat the pedicle. Out of five hysterectomies that I have done, four by the intra-peritoneal and one by the extra-peritoneal method, the one that was treated by the elastic ligature died quicker than any of the rest. I am not favorably impressed with it, and think it is an unsafe ligature to use because it never ceases acting; it succeeds in stopping bleeding, but is apt to stop all circulation, and in quite a number of these cases the portion beyond the ligature sloughs and you have a sloughing wound, and may have the slough lodging in the peritoneal cavity. In the case just referred to the stump of the uterus sloughed and was a stinking, decomposing mass on post-mortem examination. Another objection I have to this ligature is that it can be applied only to the uterus, the stump itself. There are many cases, where from one circumstance or another you are led to operate, and in which the tumor does not always have a pedicle that can be embraced by any ligature. The plan that I have used for a number of years in employing the elastic ligature for other purposes, is to draw it taut and tie the ends together with silk. By fastening the ligature while tightly drawn, you can cut the ends fairly short and have no knot at all. The plan I adopted in the operation reported to-night, was a combination of the silk ligature and the cautery. I believe it to be the best method. I was very much impressed on reading Dr. Keith's recent work on uterine tumors, by an expression in reference to the treatment of the pedicle. He now treats it almost entirely by the extra-peritoneal method, but thinks the intra-peritoneal will be the coming method, the pedicle being secured by some application of the cautery to the divided surfaces. This is the best method for controlling hæmorrhages. Often there will be certain spots where arteries of some size come up through the tissue, and perhaps an isolated ligature will have to be

applied to them. I don't believe that any wound in the peritoneal cavity that is at all extensive in character, should be left without drainage. I have been satisfied, in the cases that have come under my observation, that one of the main causes of death has been from the neglect of this precaution. When I have divided a large surface, whether I have a dry cavity or not, if that surface is free in the peritoneal cavity, I shall use drainage. I do not think that it is possible to make any comparison between laparotomies for uterine tumors and ovarian tumors. There never will be the same conditions and the proportion of recoveries will never be the same. Dr. Keith does not pretend to say that one out of fifty of the cases that come to him are subjected to operation. I believe the proper method of controlling hæmorrhage and treating the stump in uterine tumors is by the combination of the silk ligature and searing the stump. The heat of the cautery I use is always a dark red. I have always adopted the plan of putting on to the stump that is to be seared the compress forceps or clamp, leaving a quarter of an inch of the tissue above it, and burning that down close to the forceps until it is perfectly smooth. I have always drained through the external wound, normally the abdominal cavity is closed and abhors any abnormal effusion; the elasticity of the walls and viscera presses it out if an opening be present.

Dr. Bartlet asked with reference to a case of double ovariotomy: At the time of the operation it was noticed that notwithstanding active purgatives had been used previously, the descending colon was full of hardened fæces: she subsequently developed obstruction of the bowel and it was impossible to get any motion at all. I examined the rectum high up, found a tight stricture, and got the bowels emptied after this was forcibly dilated.

Dr. Charles T. Parkes read a paper, entitled,

SUCCESSFUL REMOVAL OF THE UTERUS FOR FIBROIDS.

Mrs. L., an American lady, 37 years old, was first examined by me March 11, 1886. She had been married about nine years, but had never been pregnant. The consultation was held for the purpose of getting relief from an abdominal tumor, which first began to show evidence of its existence some three years ago. The first symptoms noticed was a burning pain in the right side, which continued with greater or less severity for about six months, when a small painless tumor was recognized deep in the right groin. This growth continued to enlarge steadily until she saw me, without any exacerbation of rapidity, until during the last six months when it has grown more rapidly and its volume has increased to a greater extent than during the entire previous period of its history. Lately also the patient has lost rapidly in strength and flesh. There has been no interference with menstruation, that function being performed normally the entire time.

The tumor has seemed to diminish in size during menstruation, at least the feeling of fullness was lessened at those periods. The mammæ have not shown evidence of change of any nature. The right leg has swollen slightly for short periods of time and been the site of considerable neuralgic pain. On inspection the abdomen was evenly distended by a symmetrical tumor, occupying a central position and reaching close to the *appendix ensiformis;* the respiratory acts make no impression upon it. Palpation determined the presence of considerable free fluid in the peritoneal cavity and an indistinct, uncertain kind of fluctuation in the tumor itself. There was well-marked resonance surmounting the upper half of the tumor. The mass itself was quite tender to the touch. Vaginal examination revealed the os high in the pelvis, centrally located, with a small mass behind it, seemingly continuous with it, which was supposed to be the retroverted uterus. The free abdominal fluid rendered this examination unsatisfactory. No sound was passed. No positive diagnosis was made, but the supposition favored an ovarian growth. The patient desired an early operation.

She was advised to remain quietly in bed and to take such medicines as would probably lead to removal of the ascites. These instructions were carried out, and the second and final examination was made April 11, 1886. The patient was very much reduced in flesh and very anæmic, all the mucous surfaces exceedingly bloodless. Examination showed the peritoneal fluid entirely removed—the tumor standing out freely and prominently for inspection on all sides. It still seemed to give rise to fluctuation; palpated by several medical gentlemen, and the testimony of all was that it contained fluid. To pressure the sensation was that of elasticity. Vaginal examination now showed plainly that the uterus was incorporated with the tumor, the sound went directly into it for five inches. On the posterior surface two small tumors were now plainly felt, the largest of them was supposed to be the retroverted uterus at the first examination. The diagnosis now was a uterine tumor.

The operation for removal was done at the Presbyterian Hospital, April 13, 1886, in the presence of Drs. Gunn, Etheridge, Graham, Adolphus, Mitchell, Ochsner and others. An incision was made in the *linea alba* from the umbilicus to the pubes and the tumor exposed. It showed a white, glistening surface, very much like a cyst, and seemed to contain fluid—the introduction of the trocar was not followed by any flow of fluid, and during the manipulations the tumor changed to a darkish-red color. This change of color upon manipulation I have seen occur on other occasions, and its occurrence is a very sure indication of a uterine tumor. The incision was prolonged several inches above the umbilicus and the mass turned out of the cavity. After ligating and compressing the broad ligaments with forceps they were divided and the uterus cut through three-fourths of an inch above the cervico-vaginal junction. Paquelin's cautery was used to disinfect and destroy the cervical canal and to sear the uterine stump. It was also applied freely to the edges of the divided broad ligament on both sides. This controlled perfectly all hæmorrhage except from two spurting arteries on the opposite lateral edges of the uterine stump; these were isolated and tied separately. All ligatures were of carbolized silk. A large rubber

drainage tube was carried to the bottom of Douglas's *cul-de-sac* and the extensive abdominal wound closed by eighteen sutures.

The patient was put to bed considerably collapsed, but rallied well, and as the record shows until she left for her home, May 30, never had a temperature of 100°. There still remains a small sinus at the site of the drainage tube, discharging about 1 dram of seropus in twenty-four hours. One of the silk ligatures has been discharged through it. The lady has gained flesh and strength rapidly, and is free from a trouble which was rapidly robbing her of all comfort in life and hastening her death.

The drainage tube did excellent service in this case, allowing the exit of large quantities of bloody serum for many days after operation. In my practice its use has always served a good purpose when large raw surfaces were left in the abdominal cavity from whatever cause.

In spite of the absence of rise of temperature I have never managed an abdominal section in which the external wound did so badly. The main portions of the skin united by first intention but a large abscess formed in the sheath of the rectus muscle, the pus from which extended from one end to the other of the wound; the nozzle of the irrigator introduced at one extremity of the wound and the carbolized water turned on, caused the pus to flow out freely from the opening at the lower end; the peritoneal edges united firmly at once and so saved trouble from this source.

It was slow in healing, several weeks, but finally united very soundly. The patient's very feeble vitality may account for the bad course taken by the wound. The wound was dressed, as I have been in the habit of doing for years, absolutely dry, with absorbent cotton and iodoform. My experience with these cases rather confirms a supposition that the frailest and weakest patients are the ones most likely to recover.

At the time of removal the tumor weighed fourteen pounds. Even after removal many gentlemen present were convinced from its consistence that it contained a cavity holding fluid, so very deceptive was its elasticity.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. Julius Althaus's Address before the Academy—Some Phases of Cerebral Syphilis—The Cautery in Paraplegia from Potts' Disease.

The opening attraction at the Academy of Medicine, at its first meeting after the long vacation, was the distinguished London neurologist, Dr Julius Althaus, who has for some time past been a corresponding Fellow of the Academy. He was greeted with a very large audience, and received with much applause when introduced by the President, Dr. Jacobi. After expressing his appreciation of this cordial reception, and the pleasure which it gave him to be in America and appear before the Academy, he stated that it was thirty-six years since he had first met Dr. Jacobi. This was when they were both attending lectures at the University of Bonn, on the Rhine, and he paid a graceful tribute to the talents and industry of the latter as a student.

The subject which he selected for his address was "Some Phases of Cerebral Syphilis," and the special topics to which he directed his attention were syphilitic coma and syphilitic hemiplegia. While the latter was one with which our specialists have for a considerable time been more or less familiar, the subject of syphilitic coma was almost wholly a new one, and Dr. Althaus presented a graphic clinical picture of the affection which was in every way masterly and which fairly enchained the attention of his audience. Altogether he had met with eight cases of syphilitic coma, and they were all in males between the ages of 20 and 40. In one case the coma came on only eight months after the contraction of the primary sore; in six the period after infection varied from three to five years; and in one it was developed after an interval of no less than seventeen years.

The exciting causes which he mentioned were overwork, mental anxiety or excitement, sexual excess and alcoholic excess; but in two of the cases referred to no appreciable exciting cause could be made out. Among the premonitory symptoms he spoke of headache, confusion of ideas and drowsiness, defective vision with black spots before the eyes, numbness in the limbs, and more or less loss of muscular power.

He then proceeded to describe the symptoms of the initial stage. Habitually the coma comes on during sleep, and the patient is usually discovered in the morning lying quietly on his face. He evidently suffers no pain, and there is no restlessness or tossing of the body. The countenance is utterly devoid of expression, and is generally pale. Sometimes the patient can be partially aroused. If so, he will complain that he cannot see, and on opening the lids, the eyeballs will be found to be deeply contracted within the orbits. There is also divergent strabismus, the degree of which will vary according to the intensity of the coma. The pupils are contracted, and the reflex sensibility of the conjunctiva abolished. There is marked relaxation of the muscles, the tone of which is completely lost, and the limbs on both sides are affected alike. There is more or less anæsthesia and the tendon reflexes are either diminished or entirely abolished. There is also incontinence of the excretions from paralysis of the sphincters. The urine dribbles away, but, as a rule, the bowels are constipated. If they are opened by purgative medicine, however, their contents are passed involuntarily. The pulse is generally slow—40, 50 or 60. In one case it was as slow as 36, but in another it was 86. Its quality is variable. The respiration is slow and shallow; the average frequency being 8 to 10 a minute. The temperature is below normal (96 to 97), and in one case was as low as 95. As a rule, the skin is dry and parched, and the tongue is dry also; while deglutition is performed with great difficulty.

Here, said Dr. Althaus, there are unmistakable signs of paralysis; but there are also signs of irritation. Such a coincidence, however, is by no means so singular as might at first appear. The brain is an exceedingly complex organ, and the gray cortex requires a larger supply of oxygenated blood than any other part. In poisoning by carbonic acid there is first a stage of irritation, and then this is followed by coma. In syphilitic coma there is also probably a a short stage of irritation. The initial stage lasts from two to five days, when recovery begins, or else the patient sinks into the final stage. In ten days or a fortnight he may apparently be well, and may be able to resume his accustomed occupations. In other instances, however, the improvement is more gradual; but it is to be noted that recovery, whether rapid or slow, takes place, as a rule, as the result of active specific treatment, and the medical attendant, if such is the result, has great reason to congratulate himself.

If, on the other hand, the progress of the coma is towards a fatal termination, at the end of the initial stage there is an intensification of the symptoms of loss of voluntary muscular power and reflex sensibility. The lower jaw drops, and the mouth lies wide open. The breath is fetid, and the power of swallowing becomes totally lost. The surface of the body is bathed in a clammy sweat, and the pulse is small, feeble and very quick. Finally it cannot be counted, and the sphygmographic tracing produced by it is that of a person in collapse. The respiration grows more and more rapid, and it may be of the Cheyne-Stokes character. Hypostatic pneumonia is also likely to result. This stage lasts from twenty-four to thirty-six hours.

Of the eight cases seen by Dr. Althaus, six ended in recovery, and two in death, in the first attack. In three of the six which recovered from the first attack there was a relapse. One of the patients recently died, after having had no less than five different attacks of syphilitic coma within three years.

The pathological explanation which Dr. Althaus gave of the affection was that it was due to occlusion of the basilar artery, which, as he pointed out, supplies some of the most important vital parts of the brain. He could produce no post-mortem evidences to support this hypothesis, however, as no autopsies were permitted in the cases which proved fatal; the opinion being based by analogy, on a number of non-syphilitic cases recorded by Vulpian, Bastian, and other authorities, in which sudden occlusion of the basilar artery caused death by profound coma. In the discussion which followed the reading of the paper, while it was admitted by a number of the speakers that occlusion of this artery might be in part the cause of the coma, it would not, in their opinion, entirely account for the condition. Thus, Dr. Amiden said that he thought a weak heart was an important factor in the production of syphilitic coma. Dr. Althaus had mentioned as the exciting causes over-exertion, anxiety, and alcoholic and sexual excess; and all these conditions were well recognized as conducing to weak heart. Taken in connection with a weak heart, he thought the arterial occlusion would satisfactorily account for all the phenomena so graphically described in the paper. Dr. Landon Carter Gray, of Brooklyn, expressed the opinion that the textural changes which take place in the brain in these cases were out of all proportion to the arterial changes, and he based this view upon two autopsies which he had had the opportunity of making, in cases where the coma was the predominant symptom before death; the paralysis present being secondary. The mere theory of some occlusion of the basilar artery, he thought, was not sufficient to account for the coma; and if the coma were very profound, it might be impossible to say whether any paralysis was present or not.

But to return to the paper itself. The diagnosis of syphilitic coma, said Dr. Althaus, may be easy or difficult according to the circumstances of the case. Apoplexy usually occurs in the aged, while this affection is rare in the prime of life, and apoplexy is attended with hemiplegia, which is lacking in syphilitic coma. The variety of apoplexy which the latter most closely resembles is that in which the hæmorrhage takes place into the pons. It may be mistaken for opium poisoning; but in syphilitic coma the pupils are not so extremely contracted as in either opium poisoning or hæmorrhage into the pons. If itching of the skin and retention of urine are present, it will indicate opium poisoning. The fits in epilepsy, hystero-epilepsy, etc., are of much shorter duration than an attack of syphilitic coma, and are also apt to be accompanied by biting of the tongue, frothing at the mouth, and perhaps petechiæ of the face.

In suspected alcoholic coma the odor of the breath is not a reliable sign, as alcoholic stimulants may have been administered at the onset of an attack of coma due to some other cause; but if the urine is found to contain alcohol, the diagnosis will be plain, since this agent, if taken in large quantities, is eliminated unchanged in the urine. The temperature is usually lowered in alcoholic coma, but not to so marked an extent as in syphilitic coma. Having spoken of the differential diagnosis of uræmic coma, Dr. Althaus went on to say that in diabetic coma, which terminates so large a proportion of the cases of diabetes mellitus, the peculiar dyspnœa and the presence of acetone and its allies in the breath and urine are principally to be relied upon in the diagnosis of this form of coma.

The prognosis of syphilitic coma is always grave, although not so hopeless as in the case of either uræmic or diabetic coma. It is serious, however, because the presence of this condition shows that the syphilitic disease has invaded the cerebral centres. Even if the patient recovers from the attack present, there is always danger of a return of the trouble. The prognosis of the immediate attack is usually favorable; but active treatment is required, and the future prognosis also depends to a large extent on this. Death or progressive paralysis of the insane is the fate of any patient who is unwilling to submit himself to persevering and prolonged medication.

In speaking of the treatment Dr. Althaus highly recommended the hypodermic injection of ether; the usual dose being 20 minims three or four times a

day. Blistering was sometimes of service, but ammonia was of little value; while the cold douche, applications of ice, etc., he thought did more harm than good. The great reliance must be on specific treatment, and the best method of employing it was in the form of mercurial inunctions. There was perhaps nothing so good for this purpose as the old time ointment; though the oleate of mercury, made with the yellow oxide, was excellent too. Lanolin could also be used with good results as a vehicle for the mercury. For hypodermic use the bichloride was the best preparation, and care should be taken to make the injections deep in the gluteal muscles, so as to avoid as far as possible the risk of abscesses.

In treating of syphilitic hemiplegia he referred to a variety of different types, scarcely any two cases being precisely alike; but remarked that they all had certain points in common. In the first place, syphilitic hemiplegia almost invariably occurred in males (95 per cent. of all cases being males); secondly, it occurred in the young (between the ages of 18 and 40); and third, it was characterized by the peculiar behavior of the deep reflex phenomena. The diagnosis of this affection by the test of treatment was often fallacious, for many cases were not materially benefited by specific treatment. There was, however, one truly pathognomonic sign, viz.: an excessive exaggeration of the deep tendon reflexes, both of the upper and lower extremities; and it is upon this symptom that Dr. Althaus depends in making the diagnosis of syphilitic hemiplegia. It can only be depended upon, of course, in cases in which the reflexes on one side are normal. The treatment, he said, is not always satisfactory, and therefore in such instances the prognosis is not good; and some cases unfortunately terminate in general paresis. It is the secondary consequences of the syphilitic process which often prove unamenable to treatment; for the removal of a syphilitic gumma will not restore the nerve cells and fibres which have already been destroyed. The lesson to be derived from these cases, therefore, is, that active treatment must be commenced as soon as there is the slightest evidence of cerebral trouble. The secondary ordinary lesions which result from syphilitic lesions of the brain are not, unfortunately, affected by anti-syphilitic treatment.

In discussing this division of the paper Dr. Robert W. Taylor, the well-known syphilographer, spoke of the labors of Drs. Van Buren and Keyes, of this city, in connection with syphilitic hemiplegia, and called attention to the fact that in a paper read here a number of years ago, which embodied these researches, and which had now been incorporated in several text-books, Dr. Keyes had described all the prominent symptoms to which Dr. Althaus had referred this evening.

As regards the treatment of cerebral syphilis, Dr. Gray remarked that he was somewhat surprised at the views expressed by Dr. Althaus. He depended, it seemed, entirely on mercurials, and had little or nothing to say in regard to iodide of potassium. For his part, he had some time since given up the use of mercury altogether in these cases, as he had never seen any beneficial results from it. He had had indisputable evidence in his experience of the superior value of the iodide, and he believed that this was the experience also of the great majority of neurologists in this country.

Dr. Putzel, on the other hand, stated that he agreed entirely with the author of the paper in regard to the marked efficiency of mercury. It was now about six years since he had become convinced that syphilis did not yield, or at least very slowly, to iodide of potassium. Formerly he employed the bichloride of mercury; but more recently he had found much better results from the use of inunction. It was his practice to employ this until the teeth began to be touched, and then to discontinue it. In connection with this, small doses of iodide of potassium sometimes seemed of service.

On the following evening Dr. Althaus read before the Neurological Section of the Academy of Medicine a paper on "The Pathology and Treatment of Paraplegia resulting from Potts' Disease," the object of which was to advocate the use of the actual cautery, and this at as early a period as possible; since if the sensibility was already affected, it would be of no service. It was the opinion of most of those present, however, that while in occasional instances the actual cautery might be beneficial, therre were other methods of treatment at our command which were, as a general rule, much preferable and much more efficient.

P. B. P.

MR. TAIT ON "OTOMIES."

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—Having been much interested in the discussion on the letter of Mr. Lawson Tait to Dr. Nelson, read before the Chicago Gynæcological Society on May 28, I hope you will permit me to add a few words to what was said on that occasion.

I think that Mr. Tait is wrong in "protesting against those stupid Greek words ending in *otomy*," for by so doing he ignores a necessity, long recognized by scientists, of borrowing, from some classical language, their technical terms. If they were all of one nation and spoke the same tongue, there would be no such necessity; but in order that the different nations might profit by each other's work, it is necessary that they adopt conventional terms that would be understood everywhere.

The term "abdominal section," preferred by Mr. Tait, would do very well for all of us English-speaking people, but it would convey to a German no more meaning than his "Bauchschnitt" does to us. Without these conventional terms the work of any one nation would be a dead letter to all others, and and each would be obliged to prosecute their scientific studies independently; so that to communicate and compare their work, these conventional terms become a necessity.

The Latin and Greek languages, which occupy so important a position in the curricula of the colleges, are understood by educated men the world over, and have therefore been adopted as the medium of intercommunication. The Greek being the more fertile,

has supplied us with most of our technical terms, without which the study of the sciences would have dragged heavily, and could hardly by this time have reached their present status.

Though Mr. Tait is evidently a better surgeon than linguist, it is somewhat surprising that the term "oncotomy" should be new to him. He must have met with it, and it is strange that, by its very ugliness, it was not impressed on his mind. It is a very old word, being contained in Dunglison's dictionary at least forty years ago. Professor Fenger was evidently right in designating mere opening of an abscess or tumor by this name, its derivation being from the Greek *ογκος*, a tumor or abscess.

Mr. Lawson Tait objects to the word "laparotomy" "because the signification of its *derivatives* (italics mine) in the use of the people who spoke the language is such that it could not by any human ingenuity be applied to any modern surgical proceeding;" but he must be reminded that it is *we* who make the "derivatives" from the *roots* supplied by "the people who spoke the language" to describe "*our* modern surgical proceedings." A greater objection to this term, in my opinion, is, that it might justify an inference that the operation (abdominal section) was limited to the lumbar region, it being derived from *λαπαδα*, the loins. On this account "gastrotomy," which seems to be the favorite term with the French, is much less objectionable. But perhaps the term least liable to objection is the one proposed by Dr. Fenger, viz., "peritonotomy," notwithstanding it has the termination so abhorent to the distinguished English surgeon.

We all must acknowledge, however, that Mr. Lawson Tait's wonderful success in this particular branch of surgery, which has justly given him a world-wide reputation, should entitle him to the privilege of selecting its name, whether from the English or any language he prefers. S. K. Jackson, M.D.

Norfolk, Va., August 20, 1886.

TOXIC URINE AND SURGICAL OPERATIONS.

To the Editor of the Journal:

Dear Sir:—I am pleased with the editorial, "Toxic Urine and Surgical Operations," in The Journal of October 2d, and hope that Mr. Reginald Harrison is entitled to all the attention your article bestows upon him, but an American, Prof. Hal C. Wyman, of Detroit, published, some years ago, ideas so very similar to those you attribute to Mr. Harrison in his article in the *Liverpool Medico-Chirurgical Journal*, that I cannot refrain from using this occasion to say that Dr. Wyman not only described all the toxic effects mentioned by Mr. Harrison, but devised an operation for relief of hypertrophied prostate, the main feature of which was that no urine could come in contact with the wound to poison it.

The principles involved in your editorial are very important. I feel that it is only right that our countrymen should have full credit for any good work they have done. Under the title of "Tenotomy of the Levator Prostatæ," Prof. Wyman published an article in the *Medical Age*, of January, 1883, in which he advised special surgical measures to avoid the toxic effects of urine. At the time the article was often quoted by other medical journals, and must be still fresh in the minds of many American surgeons. Dayton Parker, M.D.

Bluefield, Mich., Oct. 5, 1886.

NECROLOGY.

JAMES IRVIN KELLER, M.D.

Died at his home, Hot Springs, Arkansas, on September 29, of typhoid fever, Dr. James Irvin Keller, aged 31 years, 5 months and 18 days. By request we clip the following from the *Memphis Appeal*:

The *Appeal* has already announced the death of this brilliant young man; but at the request of those nearly allied with the deceased we give additional particulars as to his death and our further estimate of his character. The deceased was young, handsome and accomplished. God gave him a massive intellect, and beneath his ample brow lay a capacious brain comprehensive in grasp and which did much mighty thinking. His language was ornate, his style terse and beautiful, and in conversation he was voluble and interesting. He was one of those extraordinary creations who leap into manhood without the probation of youth, for he was eminent in his profession by the time he reached his majority. No wonder his father, Dr. James M. Keller, and his mother, Mrs. Sallie Phillips Keller, made him the idol of their lives, and worshipped him as a bright particular star whose radiance was destined to grow in splendor long after they had crumbled into dust. But "whom the Gods love die young," and the sun of Dr. Irvin Keller went down ere it reached its noon, but is sunk amid the prophetic splendors of an eternal dawn. Never was there a death seen more pathetic than his. No man ever had greater inducements to live; but young as he was, he was a philospher, and he met the fate which his knowledge as a physician told him was inexorable with the courage of a hero. He summoned the family and his friends to his bedside, and said to Dr. Rector: "I am about to pay that debt which we all must pay sooner or later, but I shall do so like a man;" and death in all his triumphs never mocked at a scene so pathetic and heart-rending. Farewell, noble Irvin. We knew you in infancy, in childhood, in boyhood and manhood. Your life was a poem, a perfect star, and the loyal hearts that loved you are bleeding, but they will ever be harps tuned to the sweet melody of remembrance. You have left unfinished the beautiful pyramid you were building to your fate, but like the lightning which leaves more picturesque the shattered shaft, death has not destroyed the symmetry and brightness of your life. Heaven gave you everything but time to accomplish a great mission You "flashed, the meteor of an hour," and the darkness your death has created tells of the brilliance of the light that has forever gone out. While dropping tears over your grave, the sympathies of your loving friends will be lavished upon

the father and mother you loved more than all the world beside. With cautious and reverent hands your friends will lift the veil of that stricken sanctuary. The whole South sympathizes with the father and wife whose girlish love lighted up with joy his early home, and is the mother of one of the most talented sons that ever lived so beautifully and died so sadly.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

PROFESSOR E. WILLIAMS, OF CINCINNATI.—It is with deep regret we learn that the health of this eminent ophthalmologist is so seriously impaired that he feels compelled to relinquish all professional engagements, including the Presidency of the Section of Ophthalmology, the duties of which he had been prosecuting with zeal and success, and to seek the restorative influences of rest and a more favorable climate.

NEW IMPROVED COMBINED TROCAR AND CANULA.—This instrument, an account of which was given in THE JOURNAL for September 25, Dr. H. L. Getz wishes us to state may be procured of George Tiemann & Co., New York, the well-known surgical instrument makers.

AMERICAN PHARMACEUTICAL ASSOCIATION.—At the last meeting of this Association the following resolution was adopted:

Resolved, That this Association solicit the aid and coöperation of the American Medical Association, in promoting the prescribing by physicians of officinal medicines only, or such preparations as have published formulas, in preference to others; and that the several State Pharmaceutical Associations make similar requests of their respective State Associations. —*Medical News*, Oct. 16, 1886.

SUCCI'S FAST.—The *Sanitary News* says: The somewhat phenomenal fast of Signor Succi, at Rome, which was recently brought to a conclusion after thirty days' continuation was undertaken to convince people of the efficacy of his herb liquor as a life sustainer. The experiment can be called a fast only because the gentleman consumed nothing but his herb liquor in given amounts, and draughts of mineral waters. In point of continuance the fast of the notorious Tanner lasted ten days longer than his Italian imitator. But while Tanner came out from his fast greatly emaciated and weakened, Succi lost none of his strength and vitality. The first three days of the recent fast were passed in bed, but after that Succi rode on horseback and took violent exercise nearly every day. His abstention from food is declared positive by those who watched him constantly. The success of his herb liquor in sustaining life is but a forerunner of what chemists may do for us in future years, when it may be that a closer study of the requirements of the human frame will reveal foods in forms we know not of, and when the refreshing meal may come from the apothecary's rather than from the shambles.

OFFICERS OF THE WASHINGTON OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY FOR THE ENSUING YEAR. —President, A. F. A. King, M.D.; Vice-Presidents, S. C. Bussey, M.D., and W. W. Johnston, M.D.; Rec. Secretary, H. M. Cutts, M.D.; Cor. Secretary, S. S. Adams, M.D.; Treasurer, George Byrd Harrison, M.D.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM OCTOBER 9, 1886, TO OCTOBER 15, 1886.

First Lieut. Edward Everts, Asst. Surgeon, ordered to proceed to Ft. Grant, A. T., and there take station. (S. O. 94, Dept. Arizona, Oct. 1, 1886.)

First Lieut. W. W. R. Fisher, Asst. Surgeon, ordered, on the expiration of his leave of absence, to report to the commanding officer, Ft. Bidwell, Cal., for duty as Post Surgeon. (S. O. 93, Dept. Cal., Oct. 4, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING OCTOBER 16, 1886.

Woolverton, Theoron, Surgeon U. S. N., detached from the U. S. S. "Shenandoah," proceed home and wait orders.

Means, V. C. B., Asst. Surgeon U. S. N., detached from the U. S. S. "Shenandoah" and ordered to receiving ship "Independence."

Parker, J. B., Surgeon U. S. N., detached from the U. S. S. "Swatara," proceed home and wait orders.

Shafer, Joseph, Asst. Surgeon U. S. N., detached from the U. S. S. "Swatara," proceed home and await orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDED OCTOBER 9, 1886.

Peckham, C. T., P. A. Surgeon, granted leave of absence for thirty days, to take effect when relieved. Oct. 5, 1886.

Kalloch, P. C., P. A. Surgeon, granted leave of absence for twenty-one days, to take effect when relieved. Oct. 5, 1886.

Pettus, W. J., Asst. Surgeon, to proceed to Evansville, Ind., for temporary duty. Oct. 8, 1886.

Kinyoun, J. J., Asst. Surgeon, appointed an Asst. Surgeon, Oct. 4, 1886. Assigned to temporary duty at New York, N. Y., Oct. 5, 1886.

UNITED STATES ARMY MEDICAL DEPARTMENT

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, OCTOBER 30, 1886. No. 18.

ORIGINAL ARTICLES.

HEALTH INSURANCE, OR OUR FINANCIAL RELATION TO THE PUBLIC.[1]

BY WOODS HUTCHINSON, A.M,. M.D.,

LECTURER ON HYGIENE, IOWA COLLEGE OF PHYSICIANS AND SURGEONS, DES MOINES, IOWA.

If I were to put the question to this august representative assembly, "What is the most annoying and unpleasant feature of our professional work, from what source spring our most harassing, though comparatively petty cares and our most provoking disappointments?" I think I should have no difficulty in determining even if all spoke at once, that what we may call the financial question in medicine, enjoyed that "bad eminence" more generally than any other which could be suggested. No doubt much of this difficulty and unpleasantness is inherent in the very nature of the process; for this is the point of metamorphosis at which our talent and industry must be coined into their equivalent of hard cash, where our lofty ambitions, noble aims or Utopian schemes for benefiting the race, come into merciless contact with the hard, cold realities of life and the struggle for existence, always at best a mortifying experience. Friction at this point is inevitable, a reduction to a minimum is all we can hope to effect. Whether the financial relations which we sustain to the laity are the best possible which could be assumed to effect this reduction, is the question to which I wish briefly to call your attention to-day. I stand here simply as an animated interrogation point.

No doubt the question has suggested itself to many of you that the treatment of this subject would have been much more appropriately undertaken by one of wider experience and longer standing in the profession, but it is the peculiar privilege of youth and inexperience to ask the *raison d'etre*, even of truths which we have come to regard as axiomatic and customs which have grown hoary with centuries of observance. Is the system of remuneration only for services rendered, in fact of making a physician's income from a family or community depend solely upon the amount of sickness occurring in it, the best that can be devised for the mutual interests of both parties concerned? Such practically is our system. Its philosophy might be condensed in the motto "Millions for Cure, but not one cent for Prevention." The astute Chinese who were discussing civil service reform when our ancestors were building the reed hut and hurling the flint-tipped javelin, are said to pay their medical attendants regularly as long as they enjoy good health, but to promptly discontinue their remittances on the first appearance of sickness, to resume only on recovery; which no doubt has arisen from their absurdly attempting to live up to a foolish old proverb of ours about "an ounce of prevention."

It seems to me that the weakness of our system lies in this one fact, that it gives us such an exceedingly limited opportunity for what has been well called the practice of preventive medicine. No one thinks of consulting us until they at least "feel unwell," and in many instances not until days, or even weeks of precious time have been wasted or worse, in trying to "wear the trouble off," or in blindly applying every crude remedy which household experience, patent quackery or superstition can suggest; all because they are "not sick enough to call a doctor," in other words don't feel uncomfortable enough to be willing to pay more than the price of a bottle of patent medicine for relief. To such an extent has this habit of delaying been carried, that we often find patients hesitating to call us in just because they are unwilling to admit even to themselves that they are "so seriously ill" as to need our services. In fact the abominable phrase "sick enough to need a doctor" has become almost the popular synonym for, at best, a serious indisposition and often a well developed stage of a possibly fatal disease. The phrase and the feeling that it represents ought to be obliterated from the speech and thought of every civilized community. Through its influence, we are brought face to face with the legitimate result of months or even years of violation of the laws of our being aggravated by days of neglect or maltreatment, and confidently expected to avert the vengeance of outraged nature and undo the work of years, in days or weeks. "If I had only been called sooner" is a sadly familiar phrase in our professional vocabulary. To thus stem or even reverse the current of nature, we are driven to use the most powerful agents, many of them deadly poisons, to call "halt!" in tones which will compel the attention of the most obstinate morbid process and every few decades, a not wholly unnatural wave of popular indignation sweeps over the community, not against itself for living so as to render such drugs indispensable, but against physicians, forsooth, for prescribing them. It was on the crest of such ever recurring waves that the Hahnemanian, Thompsonian, Botan-

[1] Read in the Section on Public Health at the Thirty-Seventh Annual Meeting of the American Medical Association.

ical, Hydropathic and Faith-cure manias successively came into popular favor. Thus the mutual confidence and sympathy which should exist between the profession, and the public is seriously impaired and the interests of both suffer in consequence. Would not a system of constant medical attendance, remunerated alike in sickness and in health, enabling us to give advice or treatment just when we see it is needed, even if unasked, and rendering professional counsel, not only in disease but in health, the first thought, the easiest and most natural thing, the rule instead of the exception; would not such a scheme as this, if practicable, most happily modify the condition of affairs and prove a long step toward securing the health and happiness of the race?

But supposing ourselves installed in full charge of a case, are we even then freed from the perplexities of our financial system? Scarcely even then. How often are we annoyed in the very midst of a serious case, when every shadow of change must be instantly noted and promptly met, by the remark of the family, friends, or even of the patient, that they "can't afford to have us come so often." This fortunately is not a very common experience, but all of us can testify that when it does occur it is, to say the least, exceedingly disheartening. When, however, we reach the period of convalescence, another head of the hydra springs up to confront us: "Really, doctor, I feel so much better this morning that I don't think you need call again until I send for you," is the remark of our wan-lipped and languid patient, blissfully ignorant of the hundred and one pitfalls which yet lie between him and health, and we can but submit to his decision or run the risk of being thought anxious to make all we can out of the case and possibly of having our bill for subsequent services protested. How often are we called in hot haste only to find our patient beyond help, or if we escape this, how frequently does the convalescent, dissatisfied with the slow and uncertain progress he is making, conclude with charming consistency that it is the fault of our treatment, "too much strong medicine" perhaps, and resort to some rival physician, quack or vender of patent medicines, to whom he ascribes all the credit of the cure. These results are patent to the most unskilled eye, but what a prophecy of evil to come, can be read in living letters by the eye of the trained observer in the history of many of these half cured cases even when their course and termination may have been perfectly satisfactory to the unsuspecting patient and his friends. How many of our most serious and most obstinate chronic troubles spring directly from the half removed result of some acute attack? How often are the germs of evils which will curse generations yet unborn, left lurking in the system, simply because the subject thinks himself cured and doesn't want to make his bill any larger? Of course much of this too early cessation of treatment is due to a simple aversion to taking any kind of trouble unless spurred on by pain or fear, but would not this tendency be greatly checked by a knowledge on the patient's part that his bill at the end of the year would be just the same whether he took further treatment or not, while other advice or new remedies would be an additional expense; as would be the case under a system of constant attendance.

What influence does our present system of attendance give us over the sanitary surroundings, diet or habits of life of our patients? Almost none. It is true we have the priceless privilege of giving any amount of excellent advice on these subjects, which they may perhaps remember for a week, though usually they regard it simply as customary and harmless prelude to the prescription which they regard as the "value received" for their fee. Such an effect has the proportioning of our remuneration to the number of distinct definite services rendered had upon the ideas of the laity, that many of them have no idea of paying for anything, except some such tangible benefit as a prescription or an operation. In some instances we are actually obliged to give a prescription in order to secure the right (in their minds) to claim a fee. They will pay a dollar for a prescription and get the advice thrown in for nothing, and as the immortal "Josh Billings" has sagely remarked, "what people gets for nothing they are mighty apt to value at about what they gave for it." Over the home life of our patients, we have almost no control or even supervision until after the mischief (which often might have been averted by a few timely precautions) has been done, and even that ceases almost as soon as we began to exercise it. What sort of success would we expect from a nurseryman who was not permitted to prune his trees until they were already misshapen, to destroy their infesting parasites until the foliage was withered, who was not allowed to water them till they began to droop or manure them till they were almost exhausted? And yet this is the relation to the bodies of our patients in which we are practically placed by our present system. The words "cobbler and tinker" are terms of reproach, and yet cobbling and tinkering is about all we are permitted to do to the vital mechanisms of most of our patrons.

When we consider this fact in the light of the deliberate statement of Mr. Chadwick, the distinguished English sanitarian, that he can build a city which shall have any required death-rate from 3 per 1000 up. When we remember that "the white plague of the North," as Holmes aptly calls consumption which is responsible for the lion's share of our death-rate, is more than analogous to the familiar spindling of plants deprived of air and sunlight; that as much as fifty years ago, even a layman like Lord Palmerston declared that "for every death from typhoid somebody ought to hang;" that an unfailing specific for malaria, diphtheria and cholera, is contained in a six inch drain tile, in short that nearly one-half of our existing diseases are absolutely preventable, does not a readjustment of our relation to the public appear urgently necessary? How would a system of constant attendance at a fixed sum per year or month, including an annual or semi-annual sanitary inspection of the residence and surroundings, and review of the diet and habits of life of the family, if practicable, modify the conditions under which we are now attempting to promote the health of the public? I

am well aware that this system at present is generally stigmatized by us as a "quack method" if not a form of quackery itself, but I think even the bad hands into which it has to some extent fallen, should not prevent our candidly recognizing, and, if worthy, appropriating any feature of value which it may possess. Besides, we must remember that the system in part at least, is in practical operation in the different lodges and benefit associations, in manufacturing establishments and mines all over the country, with generally eminently satisfactory results regarded from an economic standpoint. Of course the principle upon which all these plans are adopted is a purely economical one, to get the greatest amount of service for the least possible cost, and they could only be expected to be a success in this direction.

The plan which I would respectfully submit is much wider in its scope, and is briefly as follows: That at the beginning of the calendar year, each individual or family should engage his or their medical attendant for the next twelve months, agreeing to pay him a specified annual salary in advance, either in full or in quarterly or monthly installments. The physician on his part should agree to render any and all professional services required, except operations or manipulations requiring the skill and training of a specialist, for the annual consideration specified, which might readily be fixed according to some rate *per capita* or *per familiam* laid down in the fee bill. The physician should further agree in consideration of the sum specified, to make an annual or semi-annual inspection of the sanitary condition of the house and premises of his client, and to offer such suggestions as he saw fit in regard to the diet or habits of life of himself or his family, in short to act as general adviser on all matters of hygiene or therapeutics. The system might briefly, and perhaps not inaptly, be described as a scheme of "health insurance." What are the advantages which seem to be presented by this plan? In the first place, our patients would have no inducement whatever to delay consulting us, in fact moved by a not unnatural desire to get their money's worth out of us, would probably hasten to do so at the earliest appearance of discomfort or danger, and thus give us full control of the case at that period in which a "stitch" properly taken often saves not "nine," but "ninety and nine." We should have every opportunity to abate or favorably modify the attack, and it needs no word from me to point out to you the well-nigh inestimable value of this vantage ground. Later during the progress of the case there would be not the slightest danger of any objection to the frequency of our visits, on the contrary the difficulty would lie in exactly the opposite direction, and would constitute the principal drawback of the system. In convalescence, we need fear no interruption to those finishing touches which may exercise such a powerful influence upon the future comfort or safety of our patient, and in the giving of which the master hand finds scope for the finest and most highly appreciated subtleties of its skill.

Above all it would give us a fair opportunity for the practice of the grand branch of preventive medicine, a privilege which under the present system is practically denied to us. How is it that until within the last few years in scarce even one of our many and justly famous professional schools and colleges, was there to be found a full Professor of hygiene or a chair of preventive medicine? Why is it that one could almost count upon his five fingers all the really valuable and exhaustive treatises upon this subject by American authors? Where are the Grosses, the Bartholows, the Flints, the Emmets of Hygiene or the Agnews, the Hammonds, the Knapps and the Roosas of Preventive Medicine? The profession of the United States has yet to produce the man who has won a national reputation solely by his work or writings in this department. One reason at least for this state of affairs is not far to seek; the field for work in this direction has been either so exceedingly limited or so barren and difficult of cultivation as to almost deprive us of any inducement to develop it. Skill and proficiency in any other branch of our art are highly appreciated and well remunerated, but in this one they are regarded with the utmost indifference. As medical students we are required to practically acquaint ourselves with, say seven branches in a comparatively short space of time, knowing that the public are quite willing to pay us for proficiency in six branches out of the seven, but will hardly even accept our advice gratis in the seventh, and the result is well-nigh inevitable. How can we expect it to be otherwise when the student has absolutely no prospect of a fair remuneration for the time and labor expended in obtaining a thorough knowledge of this branch, unless he chooses to enter the uncertain arena of politics as a candidate for the often poorly paid and unpopular position of a health officer? In spite of this utter lack of pecuniary or even honorary inducement, in the face of sneers at his "pretended" zeal, to his everlasting credit be it spoken, the American physician is today the truest promoter of the health of the people, the most earnest, and I had almost said, the only persistent advocate of sanitary measures; but would not the "health insurance" system if generally adopted give a new dignity to his labors and immensely increase the scope of his energies?

Would not this system also do much to break up that unfortunate mental habit impressed upon us from earliest infancy which involuntarily connects the doctor with discomfort and bitter medicine, if not with the undertaker and the sexton? A habit whose influence upon the popularity of the profession, though slight, is sometimes unpleasantly appreciable. It would also tend to lessen the present unfortunately too common tendency to select professional advisers on the spur of the moment or dismiss them from some momentary impulse of dissatisfaction, a course highly prejudicial to the interests of both parties. Most men give less careful, deliberate consideration to the choice or dismissal of their family physician than they would to the consummation of a horse-trade. The financial advantages of the scheme in rendering our incomes, not only more definite, but also more certain, are obvious, and the few figures bearing upon the subject which I have been able to collect, which I dare hardly dignify by the name of statistics, render it at least highly probable, that a rate *per annum* can

be fixed, which would be both satisfactory to the public and remunerative to us. The agreement would simply be an ordinary common sense business arrangement, legally binding, so that there could be no possible objection on the part of our clients to being reminded of their delinquencies by a collector or any dissatisfaction with the size of the bill. Each "policy holder" would know in advance the exact amount of his "premium" and the date at which it would be due, and could prepare to meet it promptly like any other business obligation, instead of, as now, neither knowing the amount nor the date till after it is due and regarding the obligation as a part of an inscrutable dispensation of Providence, which he will try to meet when he can conveniently spare the money.

Now just a word on the drawbacks of the scheme, though it is probably a subject which might safely be left to those who are to follow me. No doubt the objection which is already uppermost in the minds of most of you is the enormous and unreasonable demands on our time, which would be made by some of our patients under this system. In addition to the insane craving of some persons for constant medical attendance. there will be added the not wholly unnatural desire to "get their money's worth" out of us, but would we not be in some respects, in a better position to meet these demands than at present? In the first place, when entering upon the agreement, we should give our patients to clearly understand that they were engaging us, not to be simply medicine-carriers or visit-makers, but to advise them to the very best of our judgment, and that the question of the necessity of the visit must be left largely to our discretion. Then the tenure of our professional position being so much more secure, we shall be able to treat these unreasonable cases on a much more rational basis. We could safely reason with them, if necessary reprove or scold them, or even occasionally afford to tell them the truth. We might occasionally find ourselves in a position to make use of Abernethy's celebrated prescription given to a gentleman who somewhat pompously introduced himself as "James Peet, of Rock Villa, Clonmel, Waterford, Ireland." It was not committed to writing, but was delivered verbally somewhat as follows: "James Peet, of Rock Villa, Clonmel, Waterford, Ireland, go back to Rock Villa, Clonmel, Waterford, Ireland, and fancy you are well and you will be well." If these means should fail us, there are a hundred and one rusty weapons in our armamentarium such as blisters, nauseous draughts, venesections, or hypodermatic injections of *aqua destillata*, which could be used with deadly effect.

But perhaps the most practical objection would be based on the probable unwillingness of the laity to pay any sum in advance for services which they are not even sure that they are going to need; but even this objection loses some of its force, when we consider the almost innumerable number of lodges, guilds and benefit associations into which not only the educated, but even the most unintelligent classes are forming themselves for just this kind of mutual protection. When we further consider that scarcely fifty years ago, life insurance was regarded as not only absurd and impracticable, but even impious, while now men of every condition are willingly paying from $10 to $1000 a year solely for life insurance, it would scarcely seem improbable that their education up to the point of paying the comparatively trifling sum necessary for "health insurance" would simply be a matter of months or years.

Of course the annual fee would necessarily have an important effect on the weight of this objection. This can only be determined by past experience. Simply as a rough estimate of the probable amount of this fee, I would refer to a few fragmentary statistic which I have been able to collect. These statistics have been taken from four different ledgers, one of which was kept in a country village of about 1200 inhabitants, another in a town of about 6000 inhabitants, and the other two a city of 35,000 population, thus embracing nearly all classes of practice. The results even from so small a number of data are comparatively uniform. The village series comprises only twenty-seven families, or about 130 persons, who spent the exceedingly low sum of $7 per annum for medical attendance. The town statistics, covering nearly 400 families, show an average of about $13.50 per annum, while the city series, embracing 150 families, or nearly 700 persons, show an average expense of over $19.00.[1] From these it would appear to be probable that the average expense per annum, making the necessary allowances for healthfulness of location and habits of life, would approximate very closely to $13 per annum, or a little over $1.00 per month, the actual average from the enclosed figures being $13.60. When we consider the really appreciable preventative influence which we might exercise, I think we would almost be justified in concluding that we could afford to render the proposed services for the present average expense, or perhaps even for less, especially when we remember the greatly increased certainty of our being paid; and when we can represent to our clients that all these invaluable hygienic advantages may be secured in addition to regular attendance, at the cost of the latter, surely a reasonable man need have no hesitation about adopting the system. Surely we could afford to perform the same services under more favorable circumstances for the same sum. The sum proposed very closely approximates to that contributed by miners for similar purposes, the assessments ranging from seventy-five cents a month for a single man, to $1.25 to $1.50 a month for a married man, according to the size of his family. Probably a fair average under our system would be for adults $5.00 and children $1.25 per capita per annum, which would impose almost exactly the average expense per annum on an average family of five members. Taking these scattered figures as an indication, it would hardly appear probable that any serious objection will be raised by the laity on account of expense.

Without doubt the objections to the plan are neither few nor groundless; but are not the advantages proposed to be secured both real and valuable? In fact, it seems to me that the time has already come

[1] These statistics cover an average of about three years.

when an effort must be made to secure them. The crying need of the age is for sound hygienic teaching, and if the profession fail to give it, who can fill their place? I care not what means be adopted to reach the end, but it must be reached, and to provoke a discussion of ways and means is the sole object of these informal suggestions.

Discussion of the paper was opened by Dr. Albert L. Gihon, U. S. N., who stated that while in Nagasaki, Japan, the system suggested was substantially that pursued in his own private practice, and was found satisfactory both to patient and practitioner. It is indeed the only independent and dignified way in which to practice medicine.

He was followed by Drs. Horatio R. Storer, of Newport, R. I., W. L. Schenck, of Osage City, Kan., Geo. H. Rohé, of Baltimore, Md., Foster, of Portland, Me., Wyman, U. S. Marine Hospital, St. Louis, Hazelwood, of Grand Rapids, Mich., and Tupper, of Michigan, all of whom approved of the plan presented in the main, theoretically, at least; though most of them doubted its practicability at present.

A CASE OF AORTIC ANEURISM TREATED BY THE INSERTION OF WIRE.[1]

BY JOSEPH RANSOHOFF, M.D., F.R.C.S.,

PROFESSOR OF DESCRIPTIVE ANATOMY AND CLINICAL SURGERY, MEDICAL COLLEGE OF OHIO.

The subject of aneurism never fails to arouse the interest of the surgeon. Happily the progress of our art has been such, that he who is thus afflicted needs, as a rule, no longer to consider himself an object of scientific interest solely, but can with at least a fair prospect of successful issue rely upon one or other of the methods recognized as radical in the treatment of his disease. There are cases, however, and notably those of the aorta, which are not amenable to ligation or compression, and in which despite medicinal treatment and the observance of absolute rest a rapidly fatal result must be predicted. Such cases ought not to be forsaken without an effort to save. As our science stands to-day, we are restricted to a choice between distal ligation, galvano-puncture and the introduction of foreign material into the sac of the aneurisms. It is to this latter method only that I beg to direct the attention of my colleagues of the Surgical Section. The cases of aortic aneurism in which it has been adopted are so few that the report of the following case may prove interesting if not instructive:

Case.—Alfred P., æt. 35, colored, presented himself at the Dispensary of the Medical College of Ohio, and was admitted to the Good Samaritan Hospital in May, 1885. Has been a moderate drinker, but has always enjoyed good health. Had a chancroid several years ago, but never had syphilis. In August, 1884, while pulling an oar, he made a very sudden and strenuous effort which was followed by a sharp, stinging pain in the right side of the chest. Pain has been constantly present since. Difficult breathing, more or less severe cough and inability to do hard work have gradually supervened. Slight exertions are often followed by paroxysms of dyspnœa that threaten to terminate life. From February 24 to April 27 the patient was an inmate of the Cincinnati Hospital, where, according to the records, he was kept at rest and upon the iodide of potassium, but without marked benefit.

Status præsens.—Man well-nourished and of good muscular development. Breathing labored, short, and frequently interrupted by spells of coughing whereby a thick tenacious mucus is expelled. A marked œdema of the root of the neck and extending to the right side of the face and the shoulder is observed. Inspection of the chest reveals a conical prominence on the right side of the sternum and extending over the second and third intercostal spaces. The projection is as large as a fist, pulsates perceptibly, but presents no discoloration of the integument. On palpation a pronounced expansile pulsation is felt from below the clavicle to the fourth rib and from the right margin of the sternum to half an inch beyond the mammary line. The tumor is very soft, fluctuating and exceedingly sensitive to pressure. Percussion elicits a dull sound. No thrill can be felt. Auscultation over the tumor reveals no adventitious sounds produced within it. The cardiac sounds are transmitted with more than ordinary clearness, and particularly is the accentuation of the aortic sound noticeable. The position of the apex beat is normal. While the patient is at rest his pulse is 100. According to the sphygmographic tracings taken by the late Dr. Keyt, the pulsation in the radials is synchronous and the pulse-waves agree sufficiently in form. Auscultation over the right lung reveals a harsh inspiratory noise below the lower angle of the scapula. Coarse mucous râles are audible over both lungs.

Diagnosis.—Sacculated aneurism of the ascending aorta, with perforation of the chest wall, unattended by atheroma or cardiac hypertrophy.

Treatment.—When the patient was admitted to the Samaritan Hospital he was placed in bed and kept as much at rest as the cough and dyspnœa would permit. His diet was greatly restricted and 20 grains of the iodide of potassium given three times a day. For a week this treatment, with the administration of an hypodermic injection of morphia at night, was continued with apparent benefit. The pain and dyspnœa were somewhat diminished and the pulse rate reduced to 90 per minute. No perceptible change in the aneurism occurred. The improvement in the condition of the patient was dissipated two weeks after his admission after a severe spell of vomiting which was followed by an increase of pain and dyspnœa, and protracted epistaxis. When the irritability of the stomach had been allayed, the administration of the iodide was resumed, but without marked benefit. During the third and fourth weeks of the patient's stay in the hospital, six subcutaneous injections of ergotine were made in the vicinity of the tumor, with but faint hopes of benefiting him. While no direct detriment to the diseased vessel resulted from

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

them, they were followed by so much pain that they were discontinued.

It was at this time that Loreta, of Bologna, reported his favorable case of aneurism of the abdominal aorta in which he had given a new and striking impetus to Moore's method of treating aneurisms which from their position are not remediable by ordinary surgical procedures. Recognizing the otherwise hopeless condition of the patient, and after consultation with my colleagues Drs. Whittaker and Nickles, it was determined to insert a coil of wire into the sac in the hope of causing its obliteration by the formation of a firm, organizable clot. The material used was flexible silver wire which had frequently been coiled by passing it into a box of the apparent dimensions of the aneurism.

Operation June 13. A straight hollow needle with thumbscrew attachment was pushed into the aneurism from the right side. The needle was directed parallel to the chest wall, to avoid as far as possible the entrance of a coil into the lumen of the main vessel. Ninety-six inches of the wire were thus introduced into the aneurismal sac without any technical difficulty. The pain experienced was very slight and during the introduction of the first four feet of wire the pulse continued unchanged. It suddenly became almost imperceptible and very rapid. The patient complained of great faintness and it appeared that death was imminent. After the administration of several injections of whiskey, the pulse gained in strength and the remainder of the wire was introduced without further interruption. The end of the coil was pushed into the sac by a secured piece of wire which was withdrawn with the canula. No hæmorrhage attended or followed the operation. An icebag was applied over the aneurism and an opiate administered.

On the day following the operation an amelioration of all the symptoms was noticeable. The œdema of the neck had materially subsided, the pain had diminished and the tumor was decidedly firmer in its outer portion and the pulsation was very much less marked than before the operation. From day to day, for a period of two weeks, the condition of the patient gradually improved. The pulse rarely exceeded 80; was regular and of fair volume. The temperature except on the second day was practically normal. The dyspnœa and cough were no longer distressing and it seemed certain that the organization of a firm clot was in progress. The outer portion of the tumor had become quite firm and fluctuation in it was no longer appreciable. In the last days of June, a change for the worse supervened; a change which coincided with increased pulsations and greater prominence of the internal segment of the tumor. The œdema of the neck, right side of the face and right arm became greater than at any previous period. The right eye was completely closed. The patient now could sleep only on this side. In the hope of consolidating this part of the sac a second operation was performed on the 5th of July, whereby ninety-eight inches of wire were inserted into the sternal portion. Considerable pain, but no distress attended this operation, but the symptoms remained unchanged. The region of the tumor had become quite sensitive within three days after the operation. A distinct induration of the tissues over the tumor was perceptible, and the pulsation appeared less marked. Hopes were still entertained of material improvement when the patient was found dead in bed on the morning of the 12th of July.

Autopsy.—The autopsy was made by Dr. F. Kebler, Pathologist of the Samaritan Hospital. The body is that of a negro, well-nourished and about 35 years of age. Post-mortem rigidity well-marked. The right side of the face, neck, right arm, right side of the trunk and the right lower extremity are markedly œdematous. On the right side of the chest from the clavicle to the nipple is a swelling conical in form, having a base four inches in diameter. To obtain the specimen in its entirety, the right half of the anterior chest wall was removed together with the heart, aorta and trachea. When the necessary incisions were made, the right pleural cavity was found filled with blood, the right lung being compressed.

From the anterior surface of the arch of the aorta springs an aneurismal tumor which has a long diameter of seven and a transverse diameter of four inches. The mouth of the tumor is an inch wide, and circular. Its lower margin is one inch removed from the commencement of the vessel. In the posterior and outer part of the aneurism where it is covered by the mediastinal layer of the pleura is an opening a little larger than a silver dime, where the aneurism had ruptured. When the tumor was opened from behind, there was found in the upper and outer third of the sac a firm laminated clot of considerable thickness and adherent to the sac wall. The walls of the remaining portions of the aneurism were covered with a thin layer of fibrin, the interior being filled with soft coagula of recent formation. Throughout the sac of the aneurism, imbedded in firm and recent clots, are numerous coils of silver wire. One of these rests just above and in close relation to one of the leaflets of the aortic valve. Near the seat of rupture no wire is found. When the clots were removed from the sac, it was found that the second and third ribs were perforated and that the anterior wall of the external cavity was largely made up of the pectoral muscle, which contained about two feet of closely coiled wire. Subsequent dissection of the specimen showed that the aneurism pressed severely upon the right bronchus and right innominate vein. Indeed, the latter could not be completely exposed without endangering the sac wall. The orifices of the large arterial trunks springing from the transverse arch were found pervious, and evidently the circulation in them during life was uninfluenced by the dilatation of the ascending part.

In a case like the one presented, comment should be directed towards the solution of four questions: 1. Was the operation justifiable? 2. To what extent did it imperil the life of the patient? 3. Did it offer any prospects of a radical cure of the aneurism? 4. Do the cases hitherto reported in which this plan has been tried warrant its repetition?

1. It can hardly be questioned, but that in the case before us, medicinal and postural treatment

were fairly tested and found inefficient. The choice remained between galvano-puncture, the introduction of wire and distal deligation. Were the favorable reports of Ciniselli corroborated by others, his method should certainly have been resorted to. According to most recent and weighly authorities, electrolysis fails, as a rule, to be of more than temporary benefit. Of eight cases referred to by Poore, all terminated fatally. Indeed, it is justly questioned whether the method accomplishes more than acupuncture, and in a recent supposed successful case of aneurism of the root of the neck treated by galvano-puncture, it was found that the current was almost *nil.* In the absence of atheromatous changes in the arteries my choice would have been distal deligation. I was deterred from following it because the dyspnœa was so intense and the œdema of the neck so pronounced that there was every probability of death during the operation. The introduction of wire was therefore practised as a last resort.

2. That the life of the patient was imperiled by the operation is certain. The specimen shows that notwithstanding the caution observed in introducing the wire, a loop passed beyond the neck of the sac, entered the aorta and was probably deflected by the semilunar valves. When this occurred, syncope which was all but fatal supervened. I was the less prepared for this mishap, since it had not occurred in the few cases previously recorded; furthermore, according to Bacelli, the absence of cardiac hypertrophy made the existence of a large aperture of communication exceedingly improbable.

Even with a loop of wire in the aorta, embolism, the danger most dreaded, did not occur. In only one of the reported cases, that of Moore, did death result from embolism which possibly originated in an inflammatory state in the heart itself and not in the aneurism.

The supposition that a severe hæmorrhage might ensue upon the prolonged retention of a canula in the sac wall is purely theoretical. Neither in this case nor in those already published was there any bleeding during the operation or immediately after the withdrawal of the needle. In Loreta's case of abdominal aneurism, in that of Levis of the root of the neck, and in my own, death resulted from rupture of the sac. In the case of Levis the rupture occurred on the fourth day. In Loreta's the tumor had consolidated to such an extent as to weaken the main trunk, which gave away at the neck of the sac. In the case presented, this explanation will not suffice, since neither coagula nor loops of wire were found near the seat of rupture. This took place despite the operation, and not in consequence of it.

3. To the extent that physical signs can be construed to indicate the condition of the contents of an aneurism, those of the case presented precluded the existence of organizable coagula before surgical interference was undertaken. The tumor was soft, even fluctuating, pulsating forcibly and rapidly increasing in size. The physical signs after the operation indicated the beginning of an attempt at a radical cure. The induration of the tumor, its decreased pulsation and the simultaneous improvement in the symptoms, justified a belief in the formation of an "active" clot. Post-mortem evidences confirm the belief. The walls of the sac are lined with firm, the interior with firm and loose coagula imbedded within which are the coils of wire. Similar conditions were found in the cases of Moore, Donville, Bryant, Bacelli, Schrötter, Loreta and Cayley. In almost all of them, however, all parts of the aneurism were not alike affected by the treatment, and it is therefore certain that very decided improvements in the technique of the operation, and particularly in the material introduced, must be devised before more than a partial or temporary coagulation shall result. It is not improbable that a less rigid and hence less dangerous material than wire or watch-springs will be determined upon. The firmness of the wire loops prevents unlimited diminution in the size of the sac during the process of contraction and, as was probable in Loreta's case, may lead to rupture near the attachment of the sac to the main vessel. Watch-springs are readily changed chemically by their immersion, and, as happened in Bacelli's cases, are subject to breakage. To overcome these objections, Levis, Bryant and Stimson have inserted horsehair, Murray catgut, and Schrötter, Florence silk. In Murray's case, as was to be expected, the gut was found softened and without coagula about it. Whatever faith we can have of permanently relieving these cases should be centred in horsehair rendered aseptic. It is easily passed through a canula, and in large quantity; it coils readily and is as easily compressed. The report of Loreta's case influenced me in the choice of the material used.

4. To determine the propriety of repeating the operation, at least a brief *resumé* of the literature of the subject is essential. This method of treating aneurisms may be said to have originated with Phillips,[1] who advised the retention of a seton for half an hour. Later, Sir E. Herne[2] introduced heated needles into an iliac aneurism and thereby achieved coagulation. Velpeau, Agnew, Heath, Murray, Buck and many others have since resorted to acupuncture, but without notable success. The last-named author, from his experience in two cases of aortic aneurism, considers the procedure inadmissible. In one of his cases threads of silk, in another suture pins were allowed to remain in the sac for twenty-four hours or more. Laminated clots were not developed.[3] Richet[4] mentions five cases in which acupuncture was tried without good results. The most successful cases in which acupuncture has been resorted to are those of MacEwen[5] of popliteal and ileo-femoral aneurisms respectively. Fine needles were introduced into the tumors and retained for an hour, but were moved from place to place every ten minutes. Here, as in Rizzoli's[6] case of femoral aneurism, compression was used at the same time, and probably played the more important rôle in the production of a thrombus. In both instances digital compression was resorted to

[1] Quoted by P. Vogt. Real. Encyclop., Bd. 1, p. 317, North Amer. Arch., July, 1786.
[2] Philosophical Trans., 1796.
[3] Buck. N Y. Med. Rec., vi, p. 140.
[4] Richet. Holmes's Syst. of Surg., Eng. Ed., iii, p. 514.
[5] MacEwen. Lancet, 1877, ii, 536.
[6] Refer. Handb., vol. i, p. 213.

after the withdrawal of the needles. Murray,[7] in a case of subclavian aneurism, by repeated trials of complete transfixion with long needles achieved partial consolidation.

The first case of the permanent introduction of a foreign body into an aneurism was that reported by Mr. Moore,[8] of the Middlesex Hospital, in 1864. The case selected was one of large thoracic aneurism which was on the point of bursting both into the pericardium and through the skin. Twenty-six yards of fine iron wire were inserted through a fine canula, the point of which was moved about during the operation. Rapid coagulation and temporary arrest of pulsation followed. The pulse-rate was reduced from 116 to 78. The improvement was transitory. Severe inflammation of the sac and contiguous tissues supervened and the patient died on the fifth day. Pericarditis was presumably the immediate cause of death. Abscesses were found in the kidneys, but it is doubtful whether they were of recent origin.

On May 14, 1872, Wm. Murray,[10] of Newcastle, reported a case to the Medico-Chirurgical Society in which a man lived for three weeks with twenty-one feet of wire introduced into an aortic aneurism.

On March 23, 1871, Dr. Domville[9] inserted fourteen inches of fine iron wire into an aortic aneurism that had perforated the chest wall. The tumor became firmer, but continued to increase. On the 9th of April, nine needles, each two and one half inches long, were introduced. Fatal hæmorrhage supervened two weeks later. The foreign substances were found imbedded in a firm clot.

The next cases operated upon were those of Levis, of Philadelphia, Bryant, of London, Bacelli, of Rome, and Stimson, of New York. The case of Levis[11] was one of right subclavian aneurism into which twenty-four feet of horsehair were inserted. The patient succumbed on the fourth day from rupture of the sac.

Mr Bryant's[12] case was one of popliteal aneurism in a man with ulcerative endocarditis and "chronic heart disease." Daily attempts were made with compression which was continued for hours at a time. Epistaxis supervened and the patient was evidently sinking. Twenty feet of horsehair were then introduced into the sac and produced rapid coagulation. Death four days after the operation. The horsehair was found entangled in huge laminated clots.

The cases of Bacelli[13] were all of the aorta, and watch-springs were used. The first patient was operated upon on March 27, 1873. By April 4 the cough was less severe, the pulsations less marked and the tumor had decreased in size. The patient died on May 26. The autopsy revealed an aneurism of the ascending aorta which contained laminated clots surrounding six fragments of the watch-spring. The internal surfaces of the aneurismal wall were covered with dense fibrinous layers. Bacelli's second case occurred in 1877. On April 23 he introduced three watch-springs of a total length of five feet. The tumor decreased in size and pulsations almost ceased. The patient did well until examined by a considerable number of medical men, when she commenced to fail. She died on May 3. At the autopsy the sac was found filled with clots containing parts of the spiral spring, but the coagula were not adherent to the sac wall. This separation Barcelli attributes to the examination alluded to. This author operated on a third case in the presence of the delegates to the Sanitary Conference at Rome. Through an exploring needle he introduced seven watch-springs, each twenty inches long. Death resulted on the third day, apparently from exhaustion.[14]

Dr. L. A. Stimson[15] introduced fifteen pieces of horsehair each six inches long into an ileo-femoral aneurism with entirely indifferent result. Coagulation did not ensue. A favorable result was subsequently obtained from ligation of the iliac.

On November 9, 1885, Prof. Schrötter,[16] of Vienna, inserted twenty inches of Florence silk into the outer segment of an aortic aneurism that had perforated the chest wall. On the 13th, thirty inches of the same material were pushed into the lower segment of the tumor. The aneurism became firmer and pulsation less marked. It subsequently increased in all its dimensions, while intense œdema developed in its immediate vicinity. The temperature rose rapidly, probably from inflammation of the sac, and death resulted from *œdema pulmonum* on November 28. The extra-thoracic part of the sac was filled with a laminated clot in which was found the Florence silk deposited in spiral coils.

In December, 1885, Loreta,[17] of Bologna, after a careful study of other operative procedures in similar cases, resorted to laparotomy in a case of sacculated abdominal aneurism. The tumor was situated in the epigastrium and left hypochondrium. There was a loud bruit. The pulse was hardly perceptible in the femoral arteries and ceased altogether when the tumor was compressed. Loreta determined if possible to separate the sac from its connections and to close its opening out of the artery by suture or ligature. If this should prove impracticable it was determined to stuff the cavity with wire. At the operation by which an incision was made from the xyphoid cartilage to the umbilicus, the sac was found united to the stomach, omentum, transverse colon and liver. It was impossible to sever these adhesions and therefore to trace the aneurism to its mouth. A little more than two yards of silvered copper wire were then inserted into the tumor through a canula, and the point of puncture was lightly touched with pure carbolic acid. There was no bleeding. The abdominal wound was closed and healed by first intention. By the seventieth day after the operation, the tumor, which had been as large as the head of a new-born child, was reduced to the size of a walnut and was firmly consolidated. The patient left the

[7] Ibid.
[8] Medico-Chirurg. Trans., xlvii, p. 129.
[9] Stimson. Ref. Handb., p. 213, vol.
[10] Brit. Med. Journal, vol. 1872.
[11] Phil. Med. Times, March 28, 1874. According to Agnew, Levis made a second unsuccessful attempt in an iliac aneurism, and Maury met with a bad result in one of the subclavian.
[12] Trans. Pathol. Soc., 1877, p. 103.
[13] Revue critique sur le traitement des Anev. de l'Aorta. Bull. gén. de Therapie, 1878, vol. xcx.
[14] Brit. Med. Jour., June 20, 1885.
[15] Amer. Jour. Med. Sci., lxxx, p. 64.
[16] Deutsch. Arch. f. Klin. Med., vol. 35, p. 139.
[17] Mem. of the Roy. Acad. Bologna, vol. 6, sec. iv.; Brit. Med. Jour., 1885.

hospital cured. On the ninety-second day, however, he died of rupture of the aorta below the sac. This was filled with consolidated fibrinous clots. Loreta attributes the rupture to an ischæmia of the aortic tunics due to compression and to changes going on in the interior of the sac.

The last case published is that of W. Cayley,[18] reported to the Royal Medical and Chirurgical Society, February 23, 1886. The patient was a man aged 48, with a pulsating tumor, rising about three inches into the neck behind the right sterno-clavicular articulation. The patient was unsuccessfully treated according to Tufnell's method, and given large doses of iodide of potassium. The tumor increased in size and it was evident that it must either soon burst externally or extravasate among the tissues of the neck. On June 24, Mr. Hulke introduced forty feet of steel wire. This caused no constitutional disturbance or local pain, and this portion of the aneurism became completely consolidated. Towards the middle of August, signs of the extension of the intra-thoracic portion of the tumor became more marked and there was an increase of pulsation behind the sternum and towards the left sterno-clavicular articulation. To anticipate fatal pressure on the trachea, Mr. Gould, in the absence of Mr. Hulke, introduced a canula just above the left sterno-clavicular joint, directing the instrument obliquely towards the middle line, and inserted thirty-four feet nine inches of wire. No constitutional disturbance followed, but no relief was given to the symptoms. The patient died in a paroxysm of dyspnœa on September 19. On post-mortem examination, a large aneurism was found springing from the ascending aorta and communicating with the vessel by a very large orifice; the whole of the upper portion was completely filled by a clot, imbedded in which was the wire. The lower portion of the sac caused compression and flattening of the trachea, just above its bifurcation. The first operation produced the desired result in preventing the imminent rupture of the aneurism. The size and connections of the sac rendered the second operation ineffectual.

In the discussion of this case Dr. J. Liston Paul[19] reported a case of innominate aneurism under his care in 1874 which had been treated according to this method. The tumor bulged forward on the left side of the sternum. Into this fifteen feet of cleansed white horsehair were introduced. Slight pain and prickling over the tumor followed. In three days the tumor had grown larger and gave greater distress; on the fourth day the patient died in a convulsion. No search for emboli was made.

It is not remarkable that with such a record of failures the method under consideration has been pronounced "utterly useless" by so competent an authority as the late Dr. Gross, and that Agnew condemns it as "a rash if not criminal trifling with human life." The fourteen cases in which it has been tried terminated fatally, with the exception of Stimson's case in which the result was entirely negative. Still, analysis of the record tends to show that the criticisms just quoted are undeservedly severe and that there are ample reasons for repeating the operation in suitable cases. In the first place, death has in no instance ensued during the operation, although after examining the specimen before us, the possibility of such an occurrence must be conceded. Again, considering the gravity of the disease, the insertion of foreign material into an internal aneurism is not particularly hazardous. In the third case of Bacelli, and in those of Moore, Levis and J. Liston Paul, death followed on or before the fifth day after the operation, so that in only 30 per cent. of the cases can death be attributed to the operation itself, while in the remainder it in no way depended upon the procedure.

In conclusion, the post-mortem reports that are available show that coagulation almost invariably took place in the sac, and when sufficient time elapsed before death, the clot was found laminated and often adherent to the sac wall. In some of these cases at least, progress was made towards a cure. The aneurismal wall was strengthened, the tumor as a rule decreased in size, life was made comfortable and even prolonged. This, I think, was accomplished in the first case of Bacelli, in those of Loreta and of Cayley and probably in the one above reported. In all these cases death was imminent from compression of vital structures or from threatened rupture of the sac. Life was sustained for periods varying from three weeks to three months from the date of the operation. In view of these facts and notwithstanding the failure of the method in effecting a cure, it appears to me that the practice is worthy of further trial. Of course, it should rarely if ever be resorted to in aneurisms of peripheral vessels, when so many safer methods are at our command. Nor is it admissible in intra-thoracic and abdominal aneurisms until all ordinary therapeutic measures have been fairly tried. Practised as a last resort in such cases, it has undoubtedly lengthened life, and it is far from improbable that, if often adopted, a permanent recovery will occasionally be obtained in cases that are hopeless without it.

Dr. Herrick, of Cleveland, asked the cause of aneurisms and whether we were justified in treating such cases on purely empirical grounds?

Dr. Ransohoff, in answer, stated that the aneurism was traumatic in origin, that atheromatous degeneration would preclude such treatment, and that it was used only as a *dernier réssort;* but that the treatment was rational and not simply empirical.

[18] Brit. Med. Jour., Feb. 27, 1886.
[19] Ibid.

AN OBSCURE CASE OF EXOPHTHALMOS.[1]

BY J. H. THOMPSON, M.D.,
OF KANSAS CITY, MO.

In presenting this report of a case to the Section, I beg to apologize for its apparent insignificance, but inasmuch as I am at a loss to account for an extremely interesting condition, I am prompted to ac-

[1] Read in the Section of Ophthalmology, Otology and Laryngology, at the Thirty-seventh Annual Meeting of the American Medical Association.

quaint you with it, that I may secure information which will aid me in the future.

A little boy 5 years old received a slight cut across the face from a whip in the hands of a playmate. The eye was not injured. The only manifest result was a slight scratch on the bridge of the nose. From all accounts he was not sufficiently hurt to cry, and did not complain afterwards. I may here state that there was mumps in the neighborhood, but at this time the child was in perfect health, and as far as I could learn, had never suffered from any serious complaint. Some two weeks after the receipt of the injury, and after all traces of the blow were off the face, he began to complain, at night, of pain in his head. It was paroxysmal, for he would start up from a sound sleep, cry a moment, say that the side of his head and eye hurt him, and as quickly fall asleep again. This would happen three or four times during the night. At other times there were no indications of trouble. These attacks came on during several nights, when the family physician was consulted.

At first, after a careful examination he could find no cause for the pain, but afterwards he thought he could see that the right eye protruded, and he called me in consultation. When I saw the child he had a well-marked exophthalmos of the right side. That was all I could discern. The eye projected about one-half inch forwards, but not so far that the lids could not be closed. It was forced outwards in the axis of the orbit; was slightly movable in all directions, but could not be pushed back into the socket by moderate pressure. There was no swelling of the lids, nor any congestion or œdema of the conjunctiva. In fine, the external eye and its surroundings were normal. I searched carefully for evidences of periostitis and cellulitis, but found none. The internal eye, other than a slight clouding of the disc, perhaps some swelling, and an enlargement of the veins, was normal. Vision was good.

Inasmuch as I could not find a cause for the exophthalmos I called in consultation one of the leading surgeons of Kansas City. Again we examined carefully for retro-bulbar trouble, but in vain. Under an anæsthetic the orbit was explored both with the finger and the hypodermic needle. A small drop of serum was the result; certainly not more or different in kind than could be drawn from any tissue similar to that behind the eye. Under ether we attempted to replace the eye, but could not. It seemed as if the orbit was filled with some hard substance.

We could not make a diagnosis, nor could either of us suggest a line of treatment. However, the patient was placed upon tartar emetic and saline cathartics, with the hope that if there was a serous effusion absorption might take place. After three days' trial, the medicine did no good, but made the patient utterly miserable. The eye remained the same, if not a little worse as far as the displacement was concerned. On my own responsibility I withdrew all internal medication, prescribed a simple belladonna and white precipitate ointment for the forehead, tied a silk handkerchief over the deformed parts, and turned the child out to play with his companions. In one week he was well, the eye returned to its normal position. I afterwards examined it with an ophthalmoscope, but could not find that it had been damaged in the least. During all the time there was no quickening of the pulse, and no elevation of temperature.

THE BEST SUBSTITUTE FOR MOTHER'S MILK.[1]

BY SELDEN B. SPERRY, M.D.,

OF DELAFIELD, WISCONSIN.

If it were not for the immense importance of this subject I should feel like apologizing to this learned body for presenting a paper upon a subject so thoroughly written upon by learned practitioners and specialists of this and other countries. Yet on the other hand, we have but to glance at the innumerable preparations as recommended by physicians, and the overwhelming number of proprietary articles, to realize that the substitute for mother's milk has not been found. It then becomes the duty of the general practitioner to add his experience to that of the specialist, that his position may be strengthened. This I say because this paper presents nothing original, yet having given the subject some attention, I would add my experience to the general stock, as I feel it very desirable that we reach some conclusions on the all-important subject.

Having found, as I think, a substitute which is all that can be desired in the way of an artificial food, I purpose in this paper, in a very brief manner, to discuss its preparation and some of the reasons of failure in its use. I take it for granted that all present, like myself, believe that as a basis for an infant food cow's milk is the proper and by all means the best substitute for the mother's. It seems hardly necessary to present any arguments in favor of this statement. At the same time, you all know that cow's milk presents some differences in composition to that of human milk, and for that reason has been rejected after a short trial when found to disagree, without properly inquiring into the means of overcoming these obstacles.

What are these differences? Cow's milk contains more caseine and less sugar than human milk, and is slightly *acid*, while human milk is slightly *alkaline*. If these points of difference can be bridged it is very evident that we will find *the* substitute for mother's milk. And I think it can be done. But how?

First of all, to insure the coöperation of both mother and nurse in our efforts, it will be all-important that we exert the utmost patience in telling the "whys" and "wherefores" of what is done. It is also necessary that the process of preparing the food be as simple as is possible; that the mother and nurse be carefully instructed in the physiology of infant digestion and things pertaining to it; and of the importance of *cleanliness* and *precision* in the preparation and care of infant food.

In the March, 1883, number of the *American Journal of Obstetrics*, I gave a formula for preparing

[1] Read in the Section on Diseases of Women and Children, at the Thirty-Seventh Annual Meeting of the American Medical Association.

milk for infants, which is as follows: On a tablespoonful or more of granulated pearl barley is poured a pint of boiling water, and allowed to boil for five minutes. For infants under three months one-third of a pint of fresh cow's milk and two-thirds of a pint of this barley water are mixed and sweetened with a tablespoon*ful* of *milk sugar*. In this you have a mixture closely resembling mother's milk, and on which infants thrive.

Barley has been found the best substance for diluting the caseine, but in diseased conditions oatmeal water or rice water can be used with advantage. In preparing the barley water the nurse will often use too much barley, or not strain it, and this will be a source of failure, and a common one, too. It will be necessary, when this mixture has failed, to question the nurse closely as to how it was prepared. When the food is prepared for the baby the barley water, *hot*, should be added to milk. This will then obviate the mistake of boiling the milk, which is too often done.

In selecting milk that from ordinary cows is to be preferred to that from blooded stock. As there is a great difference in the richness of cow's milk, and in the difference between country and city milk, it may be in given cases that a dilution of two-thirds may be too great.

When infants grow rapidly and do nicely cream may be added, or the amount of milk increased. Sugar of milk is the proper substance to sweeten the mixture with, for it is not apt to cause fermentation; it is slightly laxative, and when lime-water is used with the mixture to make it alkaline, the sugar of milk makes the lime more soluble, and therefore the more readily goes to form bone tissue.

A good way is to add the sugar of milk to the barley water when made, and put it into a clean bottle. It is best to make only enough for the day. When the barley water and milk have been mixed it remains to see if the mixture is alkaline; if not, to use lime water or soda bicarbonate until it is.

Phosphate of soda has been recommended, but I have never used it. It will be necessary to provide the nurse with litmus paper.

After four years use of this food in a country practice, where I have had every chance to know when it agreed or when disagreed, and how, enables me to urge you to give it a thorough and impartial trial. I have never found it to fail. Sometimes failures result in not correcting dyspepsia when existing, or the results of improper feeding or improper food.

In the majority of cases in which the subject of the infant's food comes to our notice, we are called in to treat the child for some sickness. When an infant has been for a long time fed improperly, and the mucous membrane of bowels and stomach is out of order, the condition needs to be corrected, else the food will fail. It will not be enough to give the proper food and say the child is not sick. Bromides, with soda and chloral, or hyoscyamus, are needed just as much as proper food. Unless this is attended to the nurse will surely give it soothing syrups, and you will fail, and very likely lay it to the mixture. It is necessary to mention this source of failure for the benefit of the younger practitioners.

In conclusion, I will say that my experience with this mixture has been that it is perfect. It can be used when the mother does not furnish sufficient food herself, and the infant does just as well as if it was all her own. It only remains to say that after the age of three months it should be diluted about half for six months, for eight months one-third, and when it is ten or twelve months old it can be given clear milk.

Delafield, April 29, 1886.

A CASE OF VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.

BY ROBERT FUNKHOUSER, A.M., M.D., LL.B.,
OF ST. LOUIS, MO.
PROFESSOR OF TOPOGRAPHICAL ANATOMY AND CLINICAL SURGERY IN BEAUMONT HOSPITAL MEDICAL COLLEGE.

At the present day one of the most difficult operations is the removal of the uterus through the vagina. At first the hope was strong that the dread disease had at last found a cure. As results were heard from, from time to time, the utility of the operation began to be debated. Though it has found much favor with some, it is opposed by others equally as able. The outcome of the controversy, however, will be productive of great good and serve to point out more specifically and definitely the suitable cases for operation. An abundance has been written relative to the local or constitutional origin of cancer. Few doubt the local origin of the epithelial type of this disease. Whatever the causes may be, I am convinced that irritation of the organ, causing inflammation, especially of a chronic character, is a fruitful source; though Tilt says that in the course of thirty years' practice he has only once witnessed the passage of the womb from inflammation to cancer.

I have now a case under treatment which clinically presents every symptom of the commencement of the disease, but microscopically fails to furnish pathological changes characteristic of the disease itself, but so confident am I that malignancy in time will appear, that I would not hesitate to advise some radical treatment, as for instance, amputation of the neck. As A. Reeves Jackson says, when cancer is limited to the cervical mucous lining, it is rarely detected, perhaps never (THE JOURNAL, August 15, 1885). The disease is not discovered until it has passed deeper. We might say of cancer, generally, what applies to that of the cervical mucous lining, that it is not recognized in many cases until it ceases to be a local disease, and has advanced too deep in the tissues for a permanent cure to be effected. There can be no doubt that the microscope fails to indicate the disease in its inception in very many instances. Must we wait, then, until the disease has advanced to such an extent that the microscope can demonstrate the specificness, when the chances of rendering durable aid are greatly lessened? Will not the time come, and that soon, when we shall be able to reach with certainty a diagnosis at an earlier period of this dread disease than the microscope at present offers? Is there not some forerunner before the present pathological change is seen?

The bacillus is offered as the *fons et origo* of disease. A specific microbe is present in a specific disease. In the past year, great advancement has been made in the study of morbid changes, especially in regard to the ptomaines, which, as the result of the action of bacteria of decomposition upon organic matter, bear a close relation with each other. Lately the bacillus has been associated with the giant cell. (THE JOURNAL, May 15, 1886, Whittaker.) May not future investigation demonstrate that the bacillus precedes and is nature's warning of impending evil?

Cancer cells *per se* do not exist, but are designated such when compared with the normal cells of the tissue in which they are found. As the tendency of opinion is toward the local origin of this disease particularly of the epithelial variety, the sooner an operation is performed the greater the likelihood of saving the patient from so terrible a disease. All of the diseased tissue and some of the healthy must be removed. When, indeed, is it certain this has been accomplished? Even though the organ has been removed, immunity does not always crown our efforts. Is not the effort worth making, even though up to the present time the statistics are not as favorable as at first indicated? If Sir J. Y. Simpson removed a cancer by amputation of the neck and the patient was well eighteen years after, why should not a patient who survives the removal of the entire organ for the same disease, do as well? The operation is but comparatively new, and we must not forget the many failures in other operations for the removal of this and other diseases. Is it just and fair to question the accuracy of the diagnosis in cases that have been reported favorably, or to judge the operation by a standard far too critical, even for an old and well tried operation? Before reading Dr. Jackson's paper, referred to above, I was quite enthusiastic about this operation, but since then my ardor has become moderated. No doubt in the cauliflower type, as its extension is circumferential, some of the less radical operations would serve as well.

The history of the case is as follows: Mrs. R. R., mulatto, 29 years of age, married, servant. Her mother, 47 years of age, has uterine hæmorrhages, the cause of which at present unknown, as no examination has been made. Patient menstruated at 13 years of age, when she suffered much pain. As a rule has been regular. Has had leucorrhœa more or less since the first menstruation. Mother of two children. Character of labors, normal. About four months ago had metrorrhagia. For the last ten months the discharge has been offensive, which increased in quantity and offensiveness several weeks before the operation. The examination per speculum revealed a cauliflower excrescence, the extension being circumferential, but more prominent anteriorly. Owing to the excessive growth, which occluded the os, it was impossible to insert a sound. The patient and family were explicitly informed of the character of the disease, particularly the prognosis and treatment. Different operations were explained and statistics given. Without advising this operation or promising any favorable result, the patient was anxious to have it performed.

Assisted by Drs. King, Cole, Laidley, Gehrung, Mulhall, Shaw, and Mr. Buchanan (student of medicine), I removed the uterus July 1st, 1886. Much difficulty was experienced in bringing the patient under the influence of the anæsthetic, Squibb's ether, more than an hour being consumed in its accomplishment. The vagina having been thoroughly syringed out with carbolized hot water, the patient was placed in position. The uterus was dragged down and freed from the vagina all around. A male sound was then introduced into the bladder to indicate the relation of that viscus with the uterus, and thus facilitate the separation of the two from each other, which was done by both the scissors and fingers. The hæmorrhage, though not great, was controlled by the hot douche. The pouch of Douglas was next opened into posteriorly, and upon the fingers of the left hand passed into the wound; the peritoneum anteriorly was opened into by means of a probe, the opening being enlarged by tearing. After clearing the uterus before and behind, I attempted to retroflex it on itself, but was unable to do so on account of its enlargement and firm consistency. Besides, the vagina was not capacious. I succeeded with much difficulty, by aid of the volsella, in pulling down the uterus, when I proceeded to apply two ligatures to each broad ligament. The broad ligament of the right side was transfixed and tied in two portions, with silk ligatures. An additional silver wire was placed around the ligament nearer the uterus. The left broad ligament was tied *en masse* with a silk ligature and further up with a silver wire. The organ was then cut away with serrated scissors, and the bleeding stopped by the hot douche. After the oozing had ceased, the edges of the cut surfaces of the vagina were brought together. I was unable to bring down the stumps of the broad ligaments into the wound. Nor was the peritoneum closed. A glass drainage-tube was inserted and made firm by packing it around with absorbent cotton. The parts were insufflated with iodoform. The uterus measured 5¼ inches long, 3 inches transversely, 2⅛ inches anteroposteriorly, and the excrescence about 3 inches in diameter. Over fifteen hypodermic injections of brandy were administered during the operation, which consumed a little over an hour. The patient was consequently under the anæsthetic over two hours. Throughout the operation it was unnecessary to apply a ligature, with the exception of the ligatures to the broad ligaments, the means adopted to control hæmorrhage being the hot douche. Considerable difficulty was experienced in tying the broad ligaments, as the tissues gave very little in the attempt to draw down the organ. In ligating the left broad ligament I found a cystic condition of the Fallopian tubes, a large hydro-salpinx with a clot of blood situated in the uterine extremity, due to atresia or occlusion of the tube. Very likely the closure of the os externum by the growth had much to do with this condition.

Upon opening the womb, the mucous membrane appeared congested, and a considerable quantity of thick mucous lined the surface. The shock was very profound. Everything was done to bring about a reaction, which was slow in occurring, and was not

fully secured till the morning of the third day. The temperature after the operation was below normal, and gradually rose till the middle of the second day, when it was 99½°, and on the third day reached 100°, remaining so for four days, after which it lowered to the normal. The pulse was very rapid and feeble, for three days varying from 125 to 135. On the sixth day it lowered to 90, and from that time till the thirteenth day gradually fell to 80. At the end of three weeks, as the ligatures had not come away, I attempted to remove them. In doing so, the ligature of the right stump parted near the loop, but subsequently in a few days passed out. Several days after the other wire ligature was taken away. The silk ligatures likewise were removed, as I was afraid should they remain longer they might cause irritation.

I am not favorably impressed with the silver wire ligatures, and in future in operations of a similar character shall use the silk, as they are less likely to produce trouble should they remain behind from some unavoidable accident. At this writing, August 25, the wound has not entirely closed. There is some discharge, but no fœtor. I am afraid of the return of the disease. Should it return, it will very likely make its appearance behind the posterior wall of the bladder, as the tendency of the growth was in that direction. Especial care was taken to remove as much of the tissue as was possible without opening the bladder. On the 22d of July blood was discharged from the small opening and continued for several days. It corresponded to the usual time of menstruation. It occurred again on the 21st of August, a month later. I consider it a vicarious menstruation. Though there was no uterus, the ovaries remained. In the intervals no blood appeared. Since the removal she has been free from pain in the pelvis, though at times suffering considerably from pain in other parts of the body, of a neuralgic character, which I attributed in great measure to cold.

The growth was examined microscopically by Dr. A. Alt, who pronounced it an exquisite sample of cancer of the cauliflower type. He discovered no trace of the disease in the cornua of the organ. Before and since the operation I have prescribed Donovan's and Fowler's solutions.

Frequently in this day of surgical procedure, the medical treatment is too apt to be neglected. It is well recognized that whatever tends to depreciate the vital powers, favors the appearance and progress of this disease. The general condition of the patient should be watched and appropriate medication administered. Not that any specific cure has ever been discovered, but certain remedies in this, as in disease generally, are beneficial, and have a tendency to build up the system as well as counteract the malignant effects of the disease, and assist or increase the power of the tissues for resisting morbid development. Such are arsenic, mercury, iodide of potash, and tonics in general. The progress of the case will be watched and reported.

2650 Olive St., St. Louis, Aug. 26, 1886.

MEDICAL PROGRESS.

Fracture of the Ulna in its Upper Third Combined with Dislocation of the Head of the Radius.—Dr. Hans Doerfler of Nüremberg, in discussing the mechanism of this injury, concludes from the study of nineteen cases, that direct violence alone less frequently occasions it, than combined violence, as exercised by a fall, the proportion being five to eleven. The greater number of cases occurred between the ages of 3 and 15, all others after the 35th year.

The question in what causative relation the two injuries stand to each other, is next considered. Grénier's assertion that the two injuries could not be simultaneously produced by means of any applied violence, is disproved by the author, who experimented upon ten cadavers. After chiseling partly through the ulna, he could easily fracture it, and by continuing the pressure, could occasion luxation of the radius. He therefore believes that both injuries occur simultaneously, but that the fracture is primary and the dislocation of the radius secondary. Further experiments were performed to prove this. Luxation of the radius proved very difficult to effect, but when present, application of further violence entirely failed to fracture the ulna, but produced typical fracture of the radius in its lower third. After partial incision of the ulna, however, direct violence easily effected the desired injury, luxating the capitulum radii forward and outward, if applied from behind and laterally. The post mortem condition of the parts is accurately described in these cases of artificial production of the injury. The fragment of the ulna is not instrumental in causing the dislocation, in the author's opinion, but the radius-head may be displaced either by the continuation of the same direct violence which caused the fracture, or, by indirect violence, as by pressure upon the extended hand. The first of these modes is illustrated when the patient has been kicked, run over, hit by a stick, shot, or has fallen against some hard object; the latter, when he has first fallen against some hard body and subsequently fallen on his extended hand—as when falling down stairs. Luxation of the radius cannot occur if the ulna be fractured below its upper third. These conclusions are drawn from further experiments on the cadaver.

The *symptoms* of the injury are given as follows: Inspection reveals an angle outlined by the contour of the soft parts of the dorsal aspect of the forearm. The elbow-joint shows a well-marked bulging either towards the front, or laterally and anteriorly or posteriorly combined. This prominence, caused by the capitulum radii, moves when pronation and supination are performed. The circumference of the injured joint is increased from 2½ to 4 cm. On the posterior aspect three points can be made out, with the help of which a triangle may be constructed, having as its apex, the point of fracture of the ulna, and, as its base, a line drawn from the olecranon to the capitulum radii. This line passes directly over the external condyle of the humerus in its middle. The injured arm appears shortened to the extent of 1½

cm. The dislocation of the fragments depends upon the direction of the violence; the lower fragment remaining parallel to the radius in all cases, the upper one varying in position. The fore-arm is generally found half flexed, and half pronated. The elbow is frequently much swollen. Crepitation is always present at the point of fracture. Flexion is interfered with, but extension is possible; supination is somewhat impeded. The ulna alone is shortened about 3 cm.

Complications of the injury are some times present and consist in subluxation of the styloid process of the ulna, paralysis of the musculo spiralis nerve—a frequent source of danger—compound fracture, or injury to the soft tissue, and fractures of the epicondyles or condyles of the humerus, the latter being of very rare occurrence.

The prognosis is quite favorable if the treatment is begun at once, or even within the first six weeks. After the first two months there is less hope of success on account of the capsular degeneration; a new capsule is soon formed wherever the head of the radius remains, so that function may, in a measure, return, if the fragments of the ulna unite. If the latter does not occur, the use of the hand is entirely lost. Arthritis deformans may occur in later years as a result of the injury. The prognosis of paralysis is unfavorable.

As regards treatment, it is of great importance to bear in mind the possibility of an existence of a luxation of the radius in all cases of ulnar fracture. After replacing the capitulum of the radius with the help of extension and direct pressure from below, the arm is to be fixed in a half-supinated position and flexed at an acute angle at the elbow (so as to eliminate the action of the biceps) by means of a water-glass or starch bandage, to be left on for four or six weeks. The position of half-supination is maintained in order to prevent the new-forming callus from again occasioning a displacement.

In old cases where replacement is impossible, resection of the capitulum radii is indicated, Osteopalinclasis of the ulna may become necessary in some cases. Compound fractures are to be antiseptically treated.—*Deut. Zeitschr. f. Chirurg.* Bd. 23. H. 3 and 4.—*Annals of Surgery*, September, 1886.

HOW TO INCREASE THE BODILY WEIGHT.—In a little pamphlet entitled "Brief Practical Directions for Exercising and Using the Developing Apparatus in the Pratt Gymnasium, Amherst College," we find the following:

"Exercise all the muscles moderately for a short time daily. Do not become greatly fatigued. Take a short spray bath, with moderately cool water, two or three times a week. Avoid excessive mental exercise, study, or worry. Do things quietly and moderately, and not with a rush. Lie down and rest, or sleep for half an hour after dinner and supper if possible. Do not study soon after eating. Practice deep breathing and holding the breath, to exercise the diaphragm and stomach. Retire early at night and sleep as long as possible. If sleepless from brain work, eat a few graham crackers before retiring, to draw the excess of blood from the brain to the stomach. Then bathe the head and back of neck with cold water, and if necessary the feet also, and rub them briskly till red and dry. Eat slowly and freely, thoroughly chewing the food. Choose especially the following varieties of food. If any of them causes indigestion take less of that one. Sugars, syrups, and all sweet things. Fats, fat meats and soups. Sweet vegetables of all kinds. Corn-starch, tapioca, and all puddings, cakes, candies, and nuts, tea, coffee, chocolate, and cocoa diluted with much milk and well sweetened. Cream and new milk. Butter, eggs and condiments. All other foods may be indulged in to the extent of the inclination. Chewing gum daily before eating and between meals increases the flow of saliva, and so aids the digestion of fat-making foods. It also indirectly stimulates the secretion of the digestive juices of the stomach."—*N. Y. Medical Journal*, Oct. 16, 1886.

GASEOUS MEDICATION PER RECTUM.—BERGERON says that this therapeutic method is based on the physiological principle established by C. Bernard that the introduction by the rectum of substances, even of toxic nature, is not dangerous so long as elimination by the respiratory passages is not hindered. It has been also observed that a current of carbonic acid gas may be introduced in indefinite quantity into the rectum without giving rise to any ill effects, provided certain precautions be adopted. After having tried the effect of a number of balsamic parasiticides and antiseptics, the author has concluded by giving preference to sulphurous mineral waters. A current of four or five litres of carbonic acid gas traversing from 250 to 500 grammes of sulphurous mineral water (Eaux-Bonnes, Allevard, Saint Honoré, Challes) is introduced by the rectum twice every twenty-four hours. After the employment of these measures for a few days, it has been observed that the cough has been greatly relieved, the expectoration has been profoundly altered in quality and its quantity reduced to a very low ebb, the perspirations have been stopped, the general state has been correspondingly improved, and this not only in incipient phthisis, but also in the confirmed stages of the disease.—*Lancet*, Oct. 2, 1886.

RUPTURE OF THE BLADDER.—The result of suturing the rent in cases of ruptured bladder has not hitherto been successful, but the opinion held by surgeons, that it is the right treatment to pursue in such cases, receives strong confirmation from a case now under the care of SIR WILLIAM MACCORMAC in St. Thomas's Hospital. The patient, a strong, florid, healthy man, aged 33, injured his abdomen by running up against a post, about fifteen hours before he applied for admission. Interrupted silk sutures were used for the bladder, the rent in which was about three inches long, a catheter was tied in, and the abdomen drained by a glass tube. There was a large amount of urine in the peritoneal cavity, which was washed out with a solution of boracic acid. The operation was performed on the 22nd ult. The patient passed urine the following day, when the catheter was removed. The drainage tube was taken out on the 24th, and there has been no fever or other symptom since the operation.—*Lancet*, Oct. 2, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, OCTOBER 30, 1886.

SOME POINTS IN BRAIN SURGERY.

At the recent annual meeting of the British Medical Association MR. VICTOR HORSLEY read a very interesting and practical paper on "Brain Surgery," in which he handled the subject by describing in detail the treatment of an imaginary case, and illustrated his remarks by photographs and specimens from patients exhibited, and from lower animals which had been made the subjects of experiments. Even in the best courses on operative surgery little or nothing is done in the way of making the student familiar with operations on the brain, and it will therefore be of interest to follow closely, in this place, the matter of Mr. Horsley's paper.

On the day before the operation the head of the patient is shaved, and washed with soft soap, and then ether; after which the position of the lesion is ascertained by careful measurement, and the place marked on the scalp. After this the head is covered with lint, soaked in a 1 to 20 solution of carbolic acid, oil-silk and cotton-wool; by which it is thoroughly carbolized for at least twelve hours before the operation. The usual purgative is then administered, on the evening previous to, and an enema on the morning of, the operation. In anæsthetizing the patient Mr. Horsley advises the use of a quarter of a grain of morphia, hypodermatically, and then chloroform. (It should be remembered that chloroform is more used in England than in this country.) The morphia allows a prolonged operation with a smaller quantity of the anæsthetic; and, as ascertained by Prof. Schäfer and Mr. Horsley, it causes well-marked contraction of the arterioles of the central nervous system; so that an incision into the brain is accompanied by comparatively little oozing if the patient be under its influence. The author remarks that he has not used ether because he feared cerebral excitement from its use, while chloroform causes cerebral depression; but he states that in case of heart complications ether would be used. He thinks that in case of considerable heart trouble cocaine might be used as the anæsthetic; and if so, a very strong solution should be used when the dura mater is reached, as this membrane is very sensitive. As asepsis is the one cardinal point on which success of brain surgery depends, any solution applied to the dura must of course be thoroughly aseptic. Mr. Horsley thinks that in treating the wound the strictest Listerian precautions should be used: the spray, 1 to 20 carbolic solution, and for the first few days at least dressings of carbolic gauze. Sublimate gauze, the skin being protected by carbolic gauze, may be more serviceable; but good carbolic gauze is elastic enough.

He condemns the usually advised cruciform incision as inconvenient, for it is necessary to hold back four flaps; a semilunar flap simply has to be thrown back, and is not again in the way. It is important: 1. To carry the incision vertically to the bone and to raise with the flaps all parts superficial to the periosteum. 2. To make a shallow curve, so as to avoid cutting collateral vessels. 3. The incision must be so drawn as not to divide the main arterial trunks supplying that portion of the scalp (which can be easily done so as not to interfere with the first twenty-four hours' drainage of the wound, even if the flap be turned downwards; since, as the patient lies in the supine position, the discharge can always escape from the posterior border). The periosteum should be reflected by a crucial incision from an area corresponding to the first trephine hole, and subsequently as more bone is cut away. In removing the bone "one of the safest and most rapid plans is to make a couple of trephine holes at the opposite extremities of the area to be removed, then to cut half the sides of such an area with a Hey's saw, and finally to complete the division with a powerful bone-forceps. Assuming that the dura mater has been, by means of the trephine-holes, separated as far as possible from the under surface of the bone to be removed, I should have premised that, as no doubt will usually be the case where exploration has to be made, the opening of the skull will have been commenced by the removal of a large disc with the trephine." He prefers a trephine of two inches in diameter. When it is possible to preserve the dura mater intact the removed portions of bone should be kept in aseptic sponges, and placed between

the skin and dura mater at the end of the operation, they having been previously divided into small fragments in the manner indicated by McEwen. "The dura mater should be incised round four-fifths of the circumference of the area exposed at ⅛ inch distance from the edge of the bone, so as to render it possible to stitch the edges together afterwards. The dura mater is best opened first by incision with the scalpel, and then by blunt-pointed curved scissors, great care being taken not to wound the meninges beneath. The main branches of the middle meningeal artery are best secured by a ligature passed through the dura mater just outside its cut edge, and knotted before the vessel is divided.

We now come to the treatment of the brain. The first practical point to notice after division of the dura, says Mr. Horsley, is whether the brain immediately bulges into the trephine hole or not. "I am inclined to believe that the fact of the brain bulging very prominently into the wound indicates pathological intra-cranial tension—a piece of evidence which, if true, is obviously of the highest importance, since, other things being equal, it will indicate the existence of a tumor. I have never, in experiments on healthy animals, observed such immediate bulging, and, conversely, it has never been absent in the three cases of tumor. Should no abnormality be found in the membranes, the color of the brain should be carefully noted. Of course in order to judge as to the color one should have experience, and this may be gained by experiments on the lower animals." "The existence of a slight yellowish tinge, or, possibly, the opposite condition, namely lividity, will indicate the existence of a tumor beneath the cortex in the corona radiata. The condition of the vessels and the perivascular lymphatics must next be investigated, and particular notice taken of any yellowish white patches in the walls of the latter, indicating old mischief. An accurate knowledge of the arterial and venous supply of the brain is highly necessary, since, not only for this purpose, but also for the more difficult one of removing portions of the brain, is it of great service to see at once what portions of the brain are actually, or likely to be, deprived of their blood-supply. Alterations in the density of the brain must next be observed; but it must be remembered that cerebral tumors situated beneath the cortex are scarcely to be detected, save by exploratory incision." Now comes the consideration of the removal of a tumor or a portion of brain substance.

Probably the greatest dread of interfering surgically with the brain is the fear of hæmorrhage, which, says Mr. Horsley, is as unreasonable as the taking of aseptic precautions is indispensable. As in the kidney, the arterioles of the brain are directed perpendicularly to surface; and we know that a slight incision of the kidney is followed by free hæmorrhage, which often causes no little alarm, but which ceases if the wound be plugged for a few minutes with a piece of sponge. "We ought to treat the brain in the same way, and thus while being conservative as far as possible, we should obtain in addition a cleanly cut surface most favorable to rapid union." It will be remembered that much of this hæmorrhage may be avoided by the use of morphine. It seems scarcely necessary to say that every main vessel should be left intact, in view of the terminal character of the cerebral vessels. Owing to the fact that the vessels run in the pia mater they can be raised from the brain, and especially from the sulci while a portion of the subjacent brain is removed, and without serious damage to the vessel-wall. In incising the cortex the cut must be made exactly vertical to the surface, and directed into the corona radiata, when necessary, in such a manner as to avoid damage to fibres coming from the portions of the cortex, and surrounding the seat of the operation; which is easily done by remembering the paths taken from the cortex to the internal capsule. With a knowledge of cerebral localization it will be possible to operate without destroying all portions of any particular centre, unless total paralysis of a part be preferable to leaving diseased tissue which would keep up the symptoms for which the operation is made. After the removal of a portion of brain the floor of the wound bulges almost to a level with the surrounding cortex, and there is a tendency to hernia cerebri. Hence the value of the large semilunar flap becomes more apparent, as it more readily unites by first intention, and it is strong enough to resist the upward push of the brain; which is not the case with the cruciform incision.

In regard to closure of the wound Mr. Horsley says: "I suppose that at the present time I shall be accused of insanity if I propose to lay down the dictum that, as a rule, wound cavities produced by removal of portions of the brain are not to be drained for more than twenty-four hours; but it is, nevertheless, my intention to make such a proposition. Let us consider for a moment the conditions of the problem. We wish to obtain union by first intention—that is, firm union in four or five days. We also wish to secure pressure on the brain, which, as just mentioned, is tending to extrude; and, finally, we wish to arrange matters so that, when the wound is finally healed, the flap of skin may be separated

from the brain beneath by a cushion of soft normal (that is, non-inflammatory) connective tissue. All these latter conditions are to be obtained by allowing a certain amount of tension of wound-exudation within the cavity. During the first twenty-four hours, there is a steady oozing of blood and serous fluid from the cut surfaces. This is best removed; and therefore I put in a drainage-tube at the most dependent point of incision (that is, as the patient lies in bed). This tube is to be taken out the next day, and the wound carefully dressed, firm but gentle pressure being made over the centre of the flap. If the wound-exudation that subsequently collects in the cavity accumulates to any appreciable extent, on the third day the patient may complain of some pain and throbbing in the wound, which, when exposed, will be found to be distended in the centre, the periphery being fimly united. Now comes a most difficult point in the treatment—namely, the question whether this tension is to be allowed to proceed, or whether it should be released. By adopting the latter measure, the advantages of the pressure will be lost; so that the point in question is one requiring special attention. The practical feature upon which it is to be decided is the very simple one whether the primary union is in danger of being broken down by the pressure or not. If the former is the case, the pressure can easily be diminished by gently opening up the track of the drainage-tube with a probe, and liberating some of the exudation. The value of the tension in reducing the tendency to hernial protrusion is obvious; but I wish to draw attention to the fact that, until it is finally absorbed, the heightened pressure serves two purposes. In the first place, it compels the lymphatics of the brain meninges to absorb the fluid, just as the peritoneal vessels do after ovariotomy, so admitting of rapid union of the whole skin-wound; and, in the second place, it acts as a kind of scaffold for the building up of normal connective tissue in the part. This latter point is very obvious in the lower animals, in which, if we reopen the wound at the end of a few days, the cavity is always found filled with a delicate, spongy, pink connective tissue, the meshes of which contain the above mentioned wound-exudation. It is this connective tissue which is to form an elastic barrier between the scalp and the brain. As a general rule, it will never be necessary to do more than relieve the tension in the wound once. At the end of a week or five days, the wound may be lightly covered with a little powdered boracic acid, cotton-wool, and collodion; and the stitches may be removed at any time after the first week. It will always be found that the scalp tends to fall in a little at the seat of operation; but, if the foregoing directions have been faithfully followed out, the hollowing will be slight. It may be considered as a point of practical importance whether a patient will not run considerable risk in pursuing his avocations with a large gap or gaps in the skull. As a matter of fact, this is of little account, as evidenced by experience."

In case a second operation be necessary it will be found that the cicatricial tissues referred to above will be more vascular than the normal tissues, and the dura mater will be slightly adherent to the surface of the brain close to the cut margin on the dura mater. Old cicatrices in the substance of the cortex, above all those which have healed by suppuration, filling up cavities caused by loss of substance, frequently displace large vessels and give passage to large veins.

Mr. Horsley reported three cases of operation on the brain for epilepsy, in which the patients recovered. In one case a tumor was removed, and as the brain substance all around it appeared dusky and rather livid he removed all the part apparently diseased. Microscopic examination showed that the tumor was of tuberculous origin. Since Mr. Horsley's paper was read he has operated on another case of tumor of the brain. The patient was a man who had been absolutely hemiplegic for a month, and had passed into a semi-comatose condition; and before the development of these symptoms he had suffered from fits and a terrible pain in the head. Mr. Horsley trephined over the motor region of the right hemisphere, and removed a tumor weighing four ounces and a half. On the day after the operation the patient was perfectly rational, and free from pain. On the fourth day the wound was entirely healed. The successful outcome of these four operations gives all the more value to his admirable paper, which may be found, with an able discussion, in the *British Medical Journal*, of October 9, 1886.

SHOULD PHYSICIANS PRESCRIBE OFFICINAL MEDICINES ONLY?

The following resolution adopted by the American Pharmaceutical Association at its last annual meeting is worthy of more than a passing notice:

"*Resolved*, That this Association solicit the aid and coöperation of the American Medical Association, in promoting the prescribing by physicians of officinal medicines only, or such preparations as have published formulæ, in preference to others; and that the sev-

eral State Pharmaceutical Associations make similar requests of their respective State Associations."

To what extent members of the profession are in the habit of prescribing unofficinal medicines and preparations, accurate formulæ for the preparation of which are not published in any manner accessible to pharmaceutists generally, we have no mean of knowing. That it prevails to a considerable extent must be inferred from the fact that it has attracted the attention of the American Pharmaceutical Association and is by its members deemed of sufficient importance to require a protest from them. So far as the practice does prevail it is injurious in all its tendencies. If the physician prescribes a medicine of any particular drug-manufacturer's preparation instead of the standard article as given in the Pharmacopœia, he lessens the value of his clinical results for comparison with those obtained by others; and if he prescribes the compounds of this drug-house and that, as "Nichol's Calasaya Iron and Strychnia," or Battle's "Iodia," or the prescription of some eminent physician, as Gross's or Brown-Séquard's anti-neuralgic pills, etc., he not only renders his results valueless for therapeutic comparison, but he fosters the injurious habit of prescribing compounds without carefully adjusting the relative proportion of each ingredient to the condition of the individual patient, and greatly neglects the study of the therapeutic action and value of every drug he uses. Such prescribing is also unjust to the honest pharmacist or prescription druggist, who is compelled to keep a large assortment of unofficinal and proprietary medicines for the purpose of filling such prescriptions instead of using articles of known strength and purity, perhaps prepared by himself in accordance with the standard of the Pharmacopœia; and on the other hand, it constitutes one of the most efficient means of fostering the whole system of manufacturing proprietary compounds for popular as well as professional use, and their imposition upon credulous invalids, whether imaginary or real, to the aggregate value of millions of dollars annually. It would be a great gain to scientific medicine if every physician in prescribing would direct only remedies of officinally recognized strength and purity, and would state the exact amount of each ingredient.

EXPERT EVIDENCE.

In the case of "Louisville, etc. Railway Co. *vs.* Falvey," Sup. Court Indiana, Cent. L. J., April 2, 1886, the following important ruling was made: The opinion of a physician as to the character and permanency of a personal injury is competent. In examining an expert, counsel may assume the facts to be as he thinks they are, and ask for an opinion on those facts. It is competent for a plaintiff, injured by the negligence of another person, to prove that he obeyed the directions of his physician. One who is injured by the negligence of another is bound to use care to procure surgical aid, and also to prevent the aggravation of the injury, but the degree of care required is only ordinary care. Where a passenger receives an injury in a collision caused by the negligence of the servants of a railroad company, and disease is excited or developed by such injury, the injury may be considered as the proximate cause of the disease. It is proper to instruct the jury that if the result of the injury was to diminish the plaintiff's capacity to earn money, that fact should be taken into consideration in estimating damages. A verdict will be set aside on the ground that the damages are excessive, only in cases where the damages are such as to induce the court to believe that the jury must have acted from partiality, prejudice, or corruption. The declarations of an injured person indicative of present pain are inadmissible.

SOCIETY PROCEEDINGS.

AMERICAN RHINOLOGICAL ASSOCIATION.

Fourth Annual Session, held at the Polytechnic Building, St. Louis, Mo., October 5, 6, and 7, 1886.

TUESDAY, OCTOBER 5.—FIRST DAY.

MORNING SESSION.

The meeting was called to order by PRESIDENT A. DEVILBISS, of Toledo, Ohio.

DR. H. F. HENDRIX, of St. Louis, made the

ADDRESS OF WELCOME.

He congratulated the Association on its healthy and growing condition, and upon the high quality of its membership, that it was not a local organization, but is spread north, east, south and west.

DR. A. DEVILBISS, of Toledo, O., then delivered the

PRESIDENT'S ADDRESS.

It was appropriate, instructive and interesting, and gave much satisfaction. He spoke of the purposes of the meeting; of the splendid progress made by the Association in past years; of the duties of the Rhinologist to the general practitioner and the community in which he lives; of the necessities of medicine; of the treatment of diseases of the nose and throat as compared with the past, and lastly, of the publication of the transactions of the Association.

DR. H. JERARD, of East Lynne, Mo., read a paper on

NECROSIS OF THE NASAL BONES.

The salient points of this paper were that "we have necrosis of nasal bones which is too often attributed wrongly to syphilis, and thereby harm is done to the patient and domestic infelicity produced. Also, that the necrosis is ofttimes *not* the *result* of a diathesis, but the *cause* of the systemtic conditions. Further, that these conditions are produced in non-specific cases by too irritating treatment. Treatment must be preëminently soothing."

Dr. C. H. von Klein, of Dayton, O., did not think that there must be a specific disease in order to have diseased bone in the nose, and related cases to show that such was not the case. He recommended iodide of potassium as the constitutional treatment, and operative treatment locally.

Dr. Thos. F. Rumbold, of St. Louis, Mo., had seen a case where he thought the necrosis was due to the use of pure carbolic acid. Treated antiseptically the case recovered.

Dr. R. S. Knode, of Fort Wayne, Ind., had never yet seen a case cured permanently.

Dr. P. W. Logan, of Knoxville, Tenn., read a paper on

A MIXED FORM OF ATROPHIC AND HYPERTROPHIC CATARRHAL INFLAMMATION (HERETOFORE UNDESCRIBED), AND ITS TREATMENT.

He said there exists in mixed forms of atrophic and hypertrophic catarrhal inflammation of the upper air passages hypertrophy and atrophy of the mucous membrane of the nose, nose and pharynx, or nose, pharynx and larynx. He had observed numerous cases of the form of inflammation, some of which were apparently so slightly affected that some observers would, on examination, conclude that the affected structures were in a healthy condition. In other words, this mixed form of trouble does not present the usual characteristics of either the hypertrophic atrophic variety of catarrhal inflammation. In the mixed form of trouble he has usually found especially the atrophic element predominating in adults and in children, generally the hypertrophic element greatest, yet in both adults and children treatment adapted to atrophic inflammation is, he is sure, the correct treatment for the mixed form of catarrhal inflammation. Another valuable point made was that our treatment therefore must be directed to the relief of the atrophic condition always when atrophy exists, regardless of any hypertrophy which may be present.

Dr. Thomas F. Rumbold, of St. Louis, thought that the treatment of the mixed form should be milder than in either case. The subject was further discussed by Drs. von Klein, Jerard, Van Allen and Logan.

Dr. O. F. Brown, of Lexington, Ky., read a paper on

CHROMIC ACID AND TRI-CHLORO-ACETIC ACID IN THE TREATMENT OF HYPERTROPHIES OF PHARYNGO-NASAL CAVITIES.

Dr. C. H. von Klein had made use of this treatment with success. If diluted and mixed with iodoform it acts much more satisfactorily. He used one-quarter glycerine and three-quarters acid with about three to four per cent. of iodoform.

Dr. A. De Vilbiss did not believe it safe to use chromic acid.

Dr. O. F. Brown said that if applied in small quantity and an alkali applied immediately afterwards there would be no evil effects.

Dr. R. S. Knode preferred chromic acid.

Afternoon Session.

Dr. Carl H. von Klein then delivered an address on

RHINOLOGY IN THE PAST AND OF THE FUTURE.

(Which will be published in an early issue.)

Dr. I. W. Fink, of Hillsboro, Ill., read a paper entitled

THOUGHTS RELATING TO THE NASO-PHARYNGEAL TRACTS.

The writer held that the study of medicine as it is to-day is too much for one man to master. The naso-pharyngeal passage alone is a very important field of mucous membrane, and involves special organs of sense, olfaction, vision, hearing, and intellectual conception.

It is necessary to know what normal health is, in order to know what the opposite condition might be. In rhinological study of disease it is essential to know a healthy mucous membrane from a diseased one, and therefore it requires the most strict observation by the student of medicine to discriminate the two conditions of mucous membrane; a healthy from a diseased one; as well, also, the degree of inflammation present, in order that the treatment may be properly directed. Rhinological practice has a more important place than either the eye or ear.

The study of the sequences resulting from the diseased condition of the mucous membrane under consideration, is awakening a lively interest in the general practice of medicine, and has a first importance in the treatment of disease liable to arise from an unhealthy condition from the source we refer, "naso-pharyngeal membrane."

Dr. J. R. Van Allen, of Kansas City, read a paper on

ASTHMA, ITS CAUSE AND TREATMENT.

He said he was forced to believe colds the most frequent cause, and the nasal and pharyngeal nasal cavities the starting point of a very large proportion of the cases of asthma. He was led to this belief from having found existing in every case a very severe chronic inflammation of the nasal and pharyngo-nasal cavities, and from being able to trace every case he had had to this cause; and also from the marked relief he had been able to afford the cases presented to him by directing his whole treatment to the relief of their chronic catarrhal inflammation. He also described his treatment, and many interesting cases.

The paper was discussed by Drs. Gordon, Van Allen, T. F. Rumbold, De Vilbiss and Knode. The

general opinion being that asthma could not exist without some nasal trouble being present.

WEDNESDAY, OCTOBER 6.—SECOND DAY.

MORNING SESSION.

SCARIFICATIONS IN NASAL HYPERTROPHIES,

by DR. A. G. HOBBS, of Atlanta, Ga., was read by the Secretary.

DR. N. R. GORDON, of Springfield, Ill., stated that terebine would take the place of eucalyptol in every respect.

DR. J. NORTH, of Keokuk, Ia., scarified, and then introduced a piece of slippery elm to keep up the pressure and act as a dressing.

DR. T. F. RUMBOLD, of St. Louis, preferred scarification to the galvano-cautery.

DR. A. DE VILBISS preferred the snare.

DR. H. MARKS, of St. Louis, read a paper giving his methods in the *Treatment of Catarrhal Inflammation of the Nose and Throat, including Diphtheria.*

AFTERNOON SESSION.

DR. H. F. HENDRIX, of St. Louis, read a paper on

COLDS IN VERY EARLY INFANCY.

He claimed that the principal cause of cold-taking by infants was a sudden change from a warm to a cold atmosphere. The infant is bathed by a careless nurse and allowed to take cold, which often runs into nasal catarrh or rhinitis. His most important preventative was warm clothes, with a warm room.

DR. J. P. MATTHEWS, of Carlinville, Ill., read a paper entitled

IS HAY FEVER (SO-CALLED) A DISEASE PER SE?

He intended to prove that as in hay fever there was no elevation of temperature, no fever existed, not only the term hay fever was a misnomer, but many of the names given to the affection were also misnomers. It gave synopsis of many writers' opinions on the subject, many of whom, with the essayist, believed that emanation and probably the pollen from plants was the sole cause of the trouble. He regarded the dermatitis produced by poison oak, or poison sumach (rhus toxidendron and rhus venenatre), and the irritation produced upon mucous membranes of the upper air passages by pollen, as analogous; both the result of plant emanation; the one affecting the cutaneous surface, the other the mucous surface. Also, that unlike constitutional affections, it requires no dyscrasia, only a susceptibility to the plant, as predisposing cause, and inasmuch as one member of a family may be susceptible to either the rhus or the pollen of plants (rag-weed—ambrosia elation—most frequently) while another member of the same family is not, hereditary influences have nothing to do with it. If they be analogous, there can be no neurosis, as some authors claim. If there be no neurosis, no heredity, and not necessarily any dyscrasia, it can hardly be regarded as a disease *per se.*

The treatment recommended was possible prevention. The use of a respirator, spraying the parts with vaseline in which is incorporated either cocaine or better, watery extract of opium, with one of Dr. Rumbold's spray producers; change of residence. The first to keep out the offending pollen, the second to protect the parts and soothe them, the last, and most effective, is to move to parts where the offending plant does not grow.

DR. J. R. VAN ALLEN, of Kansas City, thought that those cases where attacks occurred in the spring were the more amenable to treatment.

DR. T. F. RUMBOLD thought that nasal disease always preceded an attack of hay fever (pruritic rhinitis).

DR. MATTHEWS believed that there were cases where there existed no disease of the nasal mucous membrane before the contact of the vegetable emanations.

DR. RUMBOLD stated that it was the experience of persons whom he had consulted that change of location was only beneficial for a few seasons, and then they would have to hunt some new place for relief. It was his opinion that by proper treatment the case could be cured in time without recourse to the harsher methods of using the cautery or acids.

DR. VON KLEIN asked the question as to whether this disease was due to certain localities, atmospheric changes, or to plants.

DR. O. F. BROWN was of the opinion that it was simply a form of catarrh. He thought it to be a disease of the terminal nerve fibres after the mucous membrane was affected.

DR. VON KLEIN stated that he had had a hay fever patient who was only five years old.

DR. A. DE VILBISS had also seen a hay fever patient five or six years old.

DR. P. W. LOGAN stated that as the catarrhal inflammation is relieved the hay fever abates. Such had always been his experience.

DR. MATTHEWS thought he had seen cases in which he could detect no trace of nasal disease. He thought that very often what catarrhal symptoms were present were due to the irritation caused by the pollen of the noxious plant. He had used respirators with good effect in some cases.

THURSDAY, OCTOBER 7.—THIRD DAY.

MORNING SESSION.

DR. N. R. GORDON, of Springfield, Ill., read a paper on the

IMPORTANCE OF EARLY RECOGNITION AND TREAMENT OF NASO-AURAL CATARRH.

He called attention to the fact that most cases of aural catarrh had their beginning in affections of the nasal passages; that many cases of impaired hearing in children were due to the neglect of nasal catarrh, which impairment dates from an attack of cold in the head. He urged the necessity of prompt treatment in all cases of catarrh which involved the ear, as giving the most satisfactory results.

DR. THOS. F. RUMBOLD read a paper on the

TREATMENT OF PRURITIC RHINITIS (HAY FEVER, SUMMER CATARRH, ETC.)

In examining the patient I am careful not to cause the least irritation, either from sneezing, coughing, or from thrusting the nasal speculum up his nostrils. If the patient is fleshy and has a troublesome cough, it is best to allay this by using spray producer No. 1, spraying a half dram of vaseline and from 2 to 5 drops of the following mixture:

℞ Pinis canadensis (Kennedy's)..... grs. iij.
Glycerinæ (Price's)..... ʒij,
Acidi carbolici ..... gr. ss.
Ol. gaultheriæ..... gtts. v.
Aquæ fero..... ʒvj.
M.

Care should be taken that the spray-producer be warm both before and after the medicaments are placed in it. Even if the remedy be liquid it should be made warm; the heated spray more readily cleansing the surface, as well as producing a soothing effect on the inflamed mucous membrane. This application will immediately mitigate the irritated condition of the throat, and make gagging less liable. This application should be followed by spraying, with spray-producer No. 4, half a dram of vaseline and about 5 grains of the following mixture:

℞ Vaseline..... ʒj.
Eucalyptol (Merck's)..... gtts. v.
M. Cold.

The same quantity and mixture should be applied with spray-producer No. 5.

In making applications with the last two instruments named, the point of the spray-producer should be placed just below and behind the pendant soft palate, alternately on each side of the uvula. The air pressure should not exceed 5 lbs. to the square inch. After a few treatments, it will be noticed—if the patient is recovering—that he will require a greater pressure, as the secretions become heavier, or more purulent.

The physician must so handle his instruments that he will not cause the patient's throat to contract, thus preventing all application. The tongue depressor should not be placed too far in the mouth, as this is apt to cause retching. If the patient breathes freely and easily, the soft palate will hang pendant and passive; a condition of these parts essential to successful treatment. If the anterior nares are not in too irritable a condition they should be sprayed with vaseline alone, using spray-producer No. 2, and a nasal speculum that will hold the nostrils widely dilated without causing irritation; not even the sensation of sneezing, as this causes more irritation than the vaseline spray can allay.

If the patient comes with his eyes red and suffused with tears, and quite a flow of watery secretion from the nostrils, at once anoint his nose, eyes, eyelids and eyebrows with vaseline. This will almost immediately allay the irritation of these organs, showing the close relationship between the integument and the mucous membrane. At this first visit I prescribe a laxative, tonic and diuretic and 10 grains of quinine, to be taken on going to bed. This completes the first day's treatment, the effect of which is a very material mitigation of all the symptoms, every patient saying voluntarily that he feels greatly improved, and this is repeated several times.

At the second visit the patient will return with his former symptoms, but all of them less severe. Headaches and difficulty in clearing his throat in the morning will be less annoying. His sneezing also will be reduced at least one-half. This course is followed up every day through the season that the patient has his attacks. If the patient has his first attack on the 20th of August and comes for treatment the 1st of September, the treatment may have to be repeated for ten or twelve days. At the end of this time the enlarged turbinated processes will be greatly reduced and the nasal respiration be carried on without difficulty. After this, treatment every other day is all that is required. Upon inquiry it will be found that upon the recovery from former attacks there has been a large muco-purulent secretion from the nasal passages, and that this has been regarded as the harbinger of recovery. But if the treatment has been successful, this discharge will not be seen, showing that local application has prevented the inflammation from reaching such a severe grade that its recovery takes place.

Electricity is a valuable adjuvant in patients who are thin in flesh, and is of little or no benefit and many times an irritant to those who are corpulent. The galvanic current should be employed. The number of cells required depends upon the effect on the patient; that is, the well-known metallic taste in the mouth should be produced, proving that the nerves of these organs are under influence of the agent. An application that does not produce this effect will prove inefficient. I use a large wooden cup containing a sponge connected with the negative pole (cathode); this is applied over the solar plexus. The positive pole (anode) is applied from the seventh cervical vertebra up to the hair. After an application of about one minute, I take the positive pole in one hand and with my wet fingers of the other hand make applications over the bridge of the nose, the eyebrows and cheeks. The whole application should not last longer than three minutes. Patients are very fond of the effect of electricity, which is frequently more beneficial during acute attacks than after recovery. Quite a number believe the best effect of electricity is experienced three or four hours after its application. I have not applied the galvano-cautery nor chromic acid in any case since last December, and used the Jarvis snare, as modified by myself, in but three out of twenty-eight cases. I have used cocaine in four or five cases. My observation is that its application is always followed by persistent congestion.

I still hold to the views I expressed at the meeting in Lexington, Ky., in 1885, namely: that no patient should be operated upon until it has been found that the treatment by the spray-producer will not have the desired effect.

Atropine solution is far better than cocaine; a 5 per cent. solution is the strength I employ. I apply it by a small piece of cotton.

In reply to a question Dr. Rumbold stated that hay fever was a neurosis from an inflammation.

DR. O. F. BROWN had used chromic acid in every case of hay fever, and had always stopped the sneezing asthma and coughing.

AMENDMENT TO CONSTITUTION.

Amendment to constitution offered last year by Dr. Carl H .von Klein, of Dayton, Ohio, to adopt the constitution of the American Medical Association, was voted on and adopted unanimously.

The following were elected

OFFICERS FOR THE ENSUING YEAR.:

President—J. A. Stuckey, M.D., of Lexington, Ky.

First Vice-President—Carl H. von Klein, M.D., of Dayton, Ohio.

Second Vice-President—Theodore North, M.D., of Keokuk, Iowa.

The Association then adjourned to meet on the last Tuesday in September, 1887, at Dayton, Ohio.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, October 7, 1886.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

RUPTURED FALLOPIAN PREGNANCY, LEFT SIDE.

DR. JOS. PRICE exhibited the ovary and distended tube, which had burst spontaneously. No fœtus was discovered; a very free hæmorrhage into the peritoneal cavity had occurred. In the vast majority of cases the rupture is fatal. The cause of death is invariably hæmorrhage.

DR. PRICE also exhibited specimens from a case of

DOUBLE PYO-SALPINX, WITH CYST OF THE RIGHT BROAD LIGAMENT, AND ABSCESS OF THE OVARY OF THE SAME SIDE.

The specimen consisted of both Fallopian tubes and ovaries, and was a good example of pyo-salpinx, both tubes being closed at the ends and distended with pus. The right tube was long and very much distended, and with a large abscess of the ovary and a cyst of the ovary as large as a base-ball, occupied the whole of the right side of the pelvic cavity, where the entire mass was firmly bound down and gave rise to great suffering. The diagnosis in this class of cases is either made or it is not made. Dr. Price is quite sure Mr. Tait, before proceeding to an operation, is fairly certain of his diagnosis, and this generally presents but little difficulty. It is true that he operates early, as soon as he recognizes dangerous trouble. Dr. Price feels certain that delay with us is accountable for the large death-rate. Dr. Mundé says of Mr. Tait: "Now his wonderful dexterity and tactile sense come into play; for with these fingers he at once makes the diagnosis which he appears to pride himself on not attempting to make with accuracy in those cases demanding removal of the uterine appendages, the so-called 'Tait's operation,' except through the abdominal incision."

While at Birmingham, recently, he visited regularly his large public clinic, and watched carefully his rapid examination; he cited one case to illustrate the fact that Mr. Tait made his diagnosis through the vagina. After passing a number of cases, displacements, etc., which he did not think of sufficient importance to ask us to examine, he came to one and kindly asked us to examine and express an opinion. Dr. Price examined and found the physical characteristics of pus. Mr. Tait's reply was "quite right." The patient was at once sent to Spark Hill for operation. One tube was found full of pus, the other partially filled, and the ovaries cystic. This case illustrates that Tait does not guess at conditions and resort to abdominal section for diagnostic purposes. A world of mischief has already come of such statements. Of course there are exceptional cases demanding exploratory incision. Tait says: "Save when the seat of such organic disease as will explain genuine suffering, the uterine appendages ought not to be removed, and that those who attribute all the pelvic ails and aches of women to the ovaries and tubes, and rush in to remove them, are dangerous people."

DR. LONGAKER considered the first case one of tubal pregnancy. Recurring attacks of peritonitis should direct attention to the probability of pyo-salpinx. The condition should be easily recognized, but is sometimes overlooked.

DR. HOWARD A. KELLY remarked that, in view of the increasing number of cases of hæmato-salpinx which we were now meeting, it was of the utmost importance that all those which came under our immediate notice should receive a more rigid examination and elaborate attention should be directed to the clinical history. He believed positive diagnostic signs would be discovered which will make our interference more a matter of scientific certainty. Dr. Kelly was not speaking of those cases of a minor degree of tubal apoplexy or hæmorrhage symptomatic of a grave dyscrasia, but of those in which, owing either to a closure of an outlet or to disease of the mucous membrane of the tubes or grave local circulatory disturbances, a mass collected forming a sausage-like tumor producing various symptoms, some of which are common to pyo-salpinx. There is always great local tenderness and often masses of exudate imbedding and obscuring the original tumor, and in cases of rupture often a peritonitis as rapidly fatal as in pus cases.

The suspicion that a tubal pregnancy lies at the bottom of the explanation in all these cases is negatived by the fact that a majority of the cases are hæmato-salpinx of both tubes.

A very important symptom, which I learn was present in Dr. Price's case, was also prominent in my own case; that is, a stillicidium of bloody grumous material per uterus and vaginum, which is regarded by the patient as a prolonged menstrual period. This undoubtedly flows from the tube, and is altogether analogous to the free purulent discharge from the tubes of pyo-salpinx which he had seen. He intends, in his next case of this kind, to catheterize the tube and dilate and endeavor to relieve his case of hæmato- or pyo-salpinx in this way, if the

discharge exists in sufficient quantity to lead him to suspect a patulous uterine orifice.

Cases of hæmato-salpinx resulting in rupture and death have been reported; one is figured by Winckel.

There are several facts in connection with the life-history of pyo-salpinx which he would like to emphasize. In the first place, he has seen no case which was not the product of a gonorrhœal infection, and while not prepared to deny the possibility of a purulent change in the contents of a hydro-salpinx, for which Bandl contends, these cases, so ably worked up by Dr. Price, and his own observations elsewhere, all point to *gonorrhœa*. Again, *these cases with a history of such acute onset*, constant, agonizing pain, high temperature and often typhoid condition, are the advance stages of a florid gonorrhœa, and are found almost exclusively among the unmarried, and result from contact with a similarly active gonorrhœa in the male. They form a picture utterly different from that developing from the exposure of a wife to the discharges of a husband who has been told that a trifling gleety discharge amounts to nothing, or who has long appeared well, only noticing the discharge after occasional debauches or unusual sexual indulgence. *Here the disease assumes the insidious sneaking type*, commencing with little periodical pains scarcely noticed at first, a slight excess of menstrual flow with more pain after, and so on for months until perhaps an abortion or a pregnancy completed seems to open up channels for a more serious and general infection. I have had typical cases of this in my own practice. It will be often noticeable here that in view of the much greater suffering experienced after the puerperal period, the patient will forget what has gone before and blames her subsequent trouble on the mismanagement of the doctor.

The extreme importance of this whole question, second to none in the whole range of gynæcological investigation, suggests to the mind many pertinent inquiries. What parts of the female genital tract are the favorite seats of the disease? In what order are the structures attacked? May it linger long in one part and then, under some change of condition, attack another part? What is the resisting power of the virus to our various therapeutic agents?

The third question he believes he can answer satisfactorily. In addition to the well known cases in which the disease lingers indefinitely in the urethral tubules and the vulvo-vaginal glands, *he believes that in many of our cases of pyo-salpinx the disease has already lingered for a long time in the uterine mucosa, and has shown itself in the form of a uterine catarrh.* Since formulating this doctrine for himself it has necessarily carried him back to the treatment of many of his cases by topical intra-uterine remedies, a form of treatment which he had some time since abandoned as irrational.

A patient is now coming to his office from whose pelvis he literally quarried out a large stinking tubo-ovarian pus-sac. The left tube and ovary were unaffected, and he left them. She has a free purulent discharge from the uterus, for which the only rational treatment is active local measures.

It is important to recognize the fact that apart from a slight irritation of the outlets of the glands at vulvar orifice, there may be no other signs of gonorrhœal disease than such discharge as issues from the uteri. The vagina may be perfectly sound. Braun and Schwartz lay especial emphasis on the fact that the flat epithelium of the vagina has great powers of resistance against the poison, while delicate epithelial structures, particularly the ciliated, are its favorite resting places.

We will apply our remedies with some success if we bear in mind the fact that the disease does not merely lie on the surface waiting to be wiped off to effect a cure, nor does it merely penetrate the tubular glands, but it invades the interior of the individual cells and attacks the nuclei; it penetrates the strata of connective tissue below, penetrates blood-vessels and lymph spaces and forms thrombi. Relapses then, even after the most energetic treatment, need not surprise us.

We find here, as in many other points, our forefathers did wiser than they knew; their therapeutic resources reached far beyond their knowledge of etiology. No wonder they used the most powerful acids and loved to leave a stick of solid nitrate of silver in the uterus to cure this most obstinate catarrh. If he cannot succeed in catheterizing some of these cases, he knows of no other way in which a perceptible deposit of pus once formed in a tube can be removed but by the radical operation. And let there be no delay here. Cases have been lost simply from the secondary consequences of carrying around this bag of pus in the abdomen. Dr. Veit alone lost two cases from brown atrophy of the heart.

Dr. M. Price remarked that the good results in his brother's operation were due to free irrigation; from three to five gallons of warm water were used to cleanse the peritoneal cavity and to stream through it for ten or fifteen minutes.

Dr. Baer made some remarks upon the value of intra-uterine medication. Although high authorities had denounced it as unnecessary and dangerous, he had continued to use it; he has never given it up as he has always found cases where it was needed, the method has been productive of good results in his hands and he never expects to give it up. It will not cure pyo-salpinx but may prevent it. It will be ludicious to see the ultra-scientific return to intra-uterine medication after the denunciation to which it has been subjected. Dr. Baer prefers the injection of tincture of iodine, carbolic acid, nitric acid, or whatever application may be preferred, say about twenty minims by means of a hard rubber syringe to any of the cotton-wrapped or other form of applicator. No case of inflammation has followed this method of treatment in his hands, and he has less uterine colic than with the applicates, perhaps because less force is required no tenaculum or curette pressure is necessary.

Dr. J. Price in closing the discussion remarked that in the first case there had been a missed period, and two or three weeks later a flow of blood commenced and was continuous for weeks with tenderness of the abdomen. By the microscope only can an exact diagnosis be made between hæmato-salpinx

and tubal pregnancy, and he had had no opportunity to make an accurate one. Rupture may occur early in tubal pregnancy.

An unhealthy condition of the endometrium is very rare. The abortive treatment of gonorrhœa as applied to the male urethra has resulted in orchitis and stricture. The case of pyo-salpinx was operated upon four weeks after an abortion.

DR. DRYSDALE, in view of recent strictures upon intra-uterine medication, would like to mention a case seen by him under Mr. Tait's treatment in 1883. The condition was endometritis, and Mr. Tait etherized the patient, dilated the uterus and applied the Paquelin thermo cautery thoroughly to the endometrium.

(*To be concluded.*)

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Sparteine in Cardiac Affections — Parasitic Mesology in Man — Turpentine in Phosphorus Poisoning — The Galvano-Cautery in Chronic Metritis and Endometritis.

Basing his theory on the results obtained by M. Laborde by experiments on animals with sparteine, Professor Germain Sée has applied this remedy to the treatment of cardiac affections. He employs the sulphate of sparteine in doses of 10 centigrammes on an average in which quantity it augments the intensity and the duration of the ventricular contractions. Professor Sée considers that sparteine is a dynamic agent of the heart, the movements of which it regulates. In this respect it acts like digitalis and the lilly of the valley, but its action is more prompt and more durable. It immediately regulates the cardiac rhythm when this is altered, and has proved itself superior in this case to the other agents. It is indicated in grave, atonic affections, with slackening of the movements of the heart. All these phenomena appear after an hour or more and persist three or four days after the suspension of the medicine. During this period the strength of the patient increases and the respiration is easily performed. The urinary functions do not appear to be affected by the small dose employed. The sulphate of sparteine appears to be useful when the heart is affected in its tissues or when there is insufficiency in its action to overcome the obstacles existing in the circulation. When the pulse is feeble, irregular, arythmic, the sulphate of sparteine reëstablishes the normal state. When the circulation is slackened, the drug overcomes this functional defect in augmenting and in preserving the force acquired by the cardiac muscle.

At the Congress of the Association Française for the advancement of Science, recently held at Nancy, M. Verneuil read a paper on "Parasitic Mesology in Man," in which the author reverted to the question of auto-inoculation in regard to the importance of the influence of the various diatheses. When an individual affected with a certain diatheses receives a wound there occur manifest localizations of this diathesis which M. Verneuil terms traumatic auto-inoculation. For this three conditions are necessary: 1. A microbe. 2. A subject in a state of special receptivity. 3. A wound on certain points of the economy differing according to the nature of the diathesis. So that the rôle of the organ affected is not passive, but becomes, on the contrary, predominant.

Thus, the tubercular bacillus does not develop every where, and the tubercle does not break out indifferently. For instance primary tubercle has never been observed in striated muscles neither in the nipples, nor in the pituitary nor ocular mucous membranes, and yet these are permanently in contact with the bacillus. The observation is still more instructive as regards bones: The compact tissue does not accept tubercle, which on the contrary finds a marvellous soil in the spongy tissue. The articulations also are easily invaded, as well as the serous tissues. The same remark may be applied to syphilis. Indeed a tableau of all the organs and of all the viruses may be formed: A virus that would pollute one organ, would disappear in another. One organ which would favor the development of one microbe would kill another. This fact is well-known to experimenters.

They know for instance that the inoculation of gangrenous septicemia which does not succeed in the blood, progresses on the contrary with terrible rapidity when it is practised in the connective tissue. Luton, in 1880, had already enunciated a similar idea apropos of hypodermic injections. but it is of importance to know what the preferred habitats of the different viruses are.

In a paper by Dr. Rondot, of Bordeaux, the author demonstrated, from clinical observations and experiments, the efficacy of "Turpentine in the Treatment of Poisoning by Phosphorus," when taken either immediately or even some hours after the poison has been swallowed. The turpentine and phosphorus combined and are eliminated without causing any other morbid phenomena than a local reaction on the alimentary and urinary organs. It is important to administer the turpentine at the outset, so as to neutralize the greatest quantity possible of the poison. Even if the phosphorus be not completely neutralized, the essential oil of turpentine renders the symptoms milder and favors recovery. Turpentine diminishes hæmorrhage and the nervous symptoms which follow poisoning by phosphorus.

Dr. Apostoli, who devotes himself specially to the female genital organs, read a paper on a "New Treatment of Chronic Metritis and in Particular of Endometritis by the Intra-uterine Application of the Chemical Galvano-Caustic." This treatment which, according to, the author, is simple and inoffensive, and which he terms a veritable therapeutic hysterometry, is nothing else than a mollecular galvano chemical scraping, acid or basic according to the cases, which provokes the formation of a new mucous membrane and constitutes a sort of intra-uterine exutory the action of which may be prolonged and varied at will. Its beneficial effect, which Dr. Apostoli observed in a great number of cases as manifest at the first sittings,

and becomes gradually accentuated and leads to a perfect cure. The patient is not condemned to absolute rest, and the treatment does not require other adjuvants. It has over surgical scraping the advantage of being dosable, localized, to be never instantaneous, and the being able to administer it in divided doses, which accumulate without danger, and at the will of the operator. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Fifth District Branch Meeting—The Work of District Branch Societies—The Value of Statistics—Milk Supply of Large Cities—Lepto-Meningitis Infantum.

The second annual meeting of the Fifth District Branch of the New York State Medical Association, which includes the city and county of New York, the Hudson River counties as far north as Ulster and Dutchess, and all the counties on Long Island and Staten Island, was held in Brooklyn on the 12th of October. The President, Dr. J. G. Porteous, of Poughkeepsie, in his annual address offered his hearty congratulations on the success not only of this Branch, but of the parent Association, and the other Branches in the State. They had demonstrated, he said, the wisdom of the action taken at Albany on that February morning that all remembered so well; a morning not without its share of doubts and fears, which had long since been brushed aside by the wisdom and moderation of the brave men who led the new departure and stood firm for the faith.

No system of societies had been originated, he went on to say, which so thoroughly covered the ground desired, and so firmly united the members, as this of district branches—not so large as to be unwieldy, but large enough to be interesting and bring a working body of working men in contact with each other, and draw out their views in a characteristic manner; not so small as to foster the petty strife of the old county societies. He had recently seen a statement by one of the Censors of the Medical Association of Alabama, that the county medical societies of that State have a good deal of important work to do, and they do it. Most of the county societies in this State had a good deal of work to do, and did *not* do it.

In perhaps a majority the meetings were annual or semi-annual, the attendance small, and the principal business the all-important one of electing officers. For years it had been only a form, and so much had this been felt by the more active members of the profession that in some parts of the State three or more counties would form an independent association, in which very good work was done. He said independent, because the State Society would not recognize them. But the District Branch Associations were still better—better organized, and, with a common head, working more harmoniously and efficiently. In this Branch, as in others that he had visited, the work had been earnest and conscientious. The papers read had been of a character to invite discussion, and while often criticised, always in a kind spirit.

This matter of discussion he believed to be one of the most important in the Association, a really good paper often bringing out many more important points than even the author himself could have anticipated. Such discussion was of the greatest importance to the large body of general practitioners, who compose the main body of the profession, men to whose care the great bulk of the community entrust their many ills; as a rule, a quiet, shrewdly observant, practical class, more willing to be taught than to attempt to teach, men who while often by circumstances precluded from being original investigators in the broadest sense of the term, are still prompt to avail themselves of the advances made in any department of medical science which they can use for the benefit of their patients, and heartily willing to give full credit to any man who adds a tithe of usefulness to the profession.

The work of the whole Association, continued Dr. Porteous, had been carried on in a most conservative and deliberate manner; even the publication of the Transactions had not been in the least degree hurried or premature. The hand of death had made itself felt in their midst, especially in the removal of the honored President of the Branch, Dr. Gault Guernsey, his lamented friend, Dr. Austin Flint, and their distinguished colleague, Dr. Frank H. Hamilton. He would not attempt to eulogize them, as abler pens than his had found it difficult to do justice to their grand and noble characters. Had these most earnest and energetic Founders lived, no doubt they would have added much to the useful work of the Branch.

This consideration brought them face to face with the fact that they should enlist the young men of the profession in their cause, and teach them that there is something greater and more noble in the profession than the mere consideration of dollars and cents. Many of the Fellows were already feeling the weight of advancing years, and would like to know that good and true men were coming forward to take their places.

Dr. Porteous then took up the consideration of the question, What is to be the value of the statistics which are with great labor and considerable expense being collected by the State? Every member of the Association had more or less of this work to do, and he had no doubt that each did it in a conscientious and painstaking manner. But did all those to whom the law intimated this duty do the same? and if not, how could the defect be remedied? He had seen a report of death made out as caused by congestion of the kidneys, without the slightest allusion to the fact that the patient died in childbirth; and further investigation showed that the cause of death reported in the case of this woman's stillborn child was "puerperal convulsions." In another case, where the mother and child were buried in the same coffin, the mother was reported as dying of "heart disease," while no allusion whatever was made to the birth of the child, which was stillborn. No return of the lat-

ter was made until after the burial, and then only at the demand of the Registrar, when the cause of death in the infant was also given as "heart disease." Such reports were certainly misleading and must necessarily seriously impair the value of any statistics compiled from them; while in this class of cases something more than mere ignorance was shown, although this was likely enough to impair their value in many instances.

Dr. Avery Segur, of Brooklyn, who has been abroad during the past summer, gave a most interesting account of his impressions of medicine in England; among the subjects included in his remarks being the history of the Royal College of Physicians, and the Royal College of Surgeons, the study of medicine in England, the qualifications required for licensed practitioners and those entitled to the degree of Doctor or Bachelor of Medicine, the clinical advantages afforded by the great London hospitals, the Gulstonian, Croonian and Lettsonian lectures, and the benefits arising from the thorough organization of the entire profession of Great Britain in the British Medical Association and its Branches.

Dr. H. A. Pooler, of Goshen, Orange County, read a paper on "The Milk Supply of Large Cities, and the Improper Mode in which it is Conducted," in which he made a searching denunciation of the modern Herods who, urged on by the greed of gain, keep up a continual slaughter of the innocents by their iniquitous practices. In speaking of the adulteration of milk by the removal of fat and dilution with water, he quoted as follows from the report of Prof. C. F. Chandler, President of the New York City Board of Health, published in the second annual report of the State Board of Health (1881–2): "While a large proportion of the milk sold has been but moderately watered and skimmed, and is still above the standard of the poorest milk (2½ per cent. of fat), much of the milk has been *extended* and skimmed far below the standard. So openly are these frauds practiced that 'creameries' have been established in many localities, the names of seventy-three such establishments being known to the writer; of which sixty-three are known to send skimmed milk to New York City, all of which is sold as whole milk on its arrival." When such milk as this was further diluted by mothers before they gave it to their infants as a substitute for breast milk, it could be readily seen how greatly the children fed upon it must suffer in consequence.

Up to 1883 there was no law in the State prohibiting the shipping and sale of skimmed milk; but the passage of such a law was then secured, and inspectors were placed on the milk trains. Dr. Pooler told the judiciary committee of the Legislature that if they would pass the law he would guarantee to reduce the mortality among young children in the city of New York at least three thousand; and he was able to keep his promise. In 1879 the mortality in children under five years was 12,777, or about 50 per cent. of the births of that year. This was before the milk adulterations were carried on so extensively as afterwards. In 1880, however, the mortality in this class increased to 14,650; and while from 1878 to 1879 it increased only 300, the increase in the number of deaths from 1879 to 1880 was about 2000. The mortality in 1881 was 17,737, an increase of almost 3000 over 1880, and about 75 per cent. of the births. In 1882 the number of deaths was about the same as in 1881; but if it had not been for the work done in the autumn of 1882, he said, the mortality would have reached nearly 20,000; a close watch being then kept upon the dealers. In the winter of 1882–3 the skimmed milk bill was passed, and notwithstanding many discouraging circumstances, the mortality was reduced from 17,737 in 1881, and 17,520 in 1882, to 13,856, a reduction of some 4000.

But, unfortunately, in 1884 the good work was interfered with; because "politics laid its icy hand of death upon the embryo of a perfect reformation in the milk supply." Up to this time the labor and means employed had been to a large extent voluntary. An appropriation was therefore asked from the Legislature; but while this was granted, a Dairy Commission was also appointed, and this commission was manipulated so as to form a part of the great political "machine." There were other political changes also, and the withdrawal of Prof. Chandler from the head of the Metropolitan Health Department was an irreparable loss. Hence the mortality in children under five years increased from 13,865, in 1883, to 15,272, in 1884, an excess of nearly 2000. Dr. Edson, of New York, and Dr. Bartley, of Brooklyn, however, did all in their power with the limited means at their command, to keep the evil in check. In the mortality statistics quoted by Dr. Pooler he made no reference to the heat or coolness of the summers in the years referred to, and long-continued hot weather is always a most potent factor in the increase of infant mortality in the city of New York. Still, there can be no possible question that any improvement in the quality of the milk supplied to the poorer classes would always be attended with the happiest results in the saving of children's lives.

The latter part of the paper was principally devoted to the evils resulting from the feeding of cows with brewers' grains and distillers' mash, which, he said, were directly injurious to the animals themselves, and, while they stimulated them in such a way that the quantity of milk given was considerably increased, they produced milk of a very inferior quality. The facts showed that the action of this kind of food was to impoverish the milk in its most essential constituent, fat, and largely increase its most objectionable constituent, caseine. When the fat is not equal to the normal amount, the milk forms an exceedingly hard curd in its coagulation, which is known to the skimmed milk cheese-makers as "hickory curd." A number of beautiful micro photographic illustrations, projected upon a screen by E. W. Martin, Ph.D., chemist to the New York Board of Health, added not a little to the interest and attractiveness of the paper.

An extended discussion followed, and in the course of it Dr. A. N. Bell, Editor of the *Sanitarian*, called attention to the fact that milk from diseased cows sometimes contains a large amount of fat; this being

particularly the case, it is said, with milk from animals suffering from rinderpest. Among the other speakers was Dr. E. R. Squibb, of Brooklyn, who stated, what is undoubtedly a fact, that notwithstanding all the frauds that are practiced upon the community, the milk supplied at present to the cities of New York, Brooklyn, and Jersey City is, as a rule, of a better quality than was formerly the case.

The best paper of the evening was by Dr. Alfred L. Carroll, of New Brighton, Staten Island, the accomplished ex-Secretary of the State Board of Health. His subject was "Lepto-Meningitis Infantum," and the sum of his argument was that a malady quite frequently occurring in childhood, and often erroneously reported as tuburcular meningitis, characterized by serous distension of the ventricles, and variously described under the names of "simple meningitis," "lepto-meningitis," and "acute hydrocephalus," but by most writers ascribed to hyperæmia and inflammation, is, on the contrary, essentially, due to cerebral anæmia; that the principal and most significant morbid factor is a varicosity of the choroid flexures, sometimes extending to those of the fourth ventricle, exerting Moxan's "stop-cock" action, perhaps, in many cases, and thus aggravating the arterial anæmia which gave it birth. Though it is possible that Dr. Carroll may be accused of an unpardonable sin by some of those who swallow German literature whole, for venturing to dispute the pathology of Huguenin, who holds to the inflammatory origin of the trouble, he successfully demonstrated the correctness of his position by the citation of many incontrovertible facts, and especially by the evidence afforded by his own post-mortem researches. His pathological studies have taught him to believe that tubercular meningitis seldom, if ever, occurs except as a part of a more generalized deposit, and that the majority of the cases ascribed to this cause in death certificates, but not verified by necropsy, are really examples of Huguenin's lepto-meningitis. P. B. P.

DEFECTS IN THE PRACTICAL WORKING OF THE SECTIONS OF THE ASSOCIATION.

To the Editor of the Journal:

Dear Sir:—It is painfully evident to every thoughtful physician who attends the meetings of the Sections of the American Medical Association, and then reads the reports published in The Journal of our National Society, that the work done here is *very unsatisfactory*. It is, therefore, highly desirable that physicians who feel an interest in the working of this National Association should take timely heed of this unfortunate condition, which seriously impairs the usefulness of this organization—*if it does not even endanger its existence*.

These introductory sentences are only preliminary to the presentation of the main question, viz.: What is now required to make a better showing for our Sections? In answer to this inquiry, it may be briefly stated *that we should secure better papers, which should be carefully and scientifically discussed, and this discussion fully reported for publication*.

This Journal has already pointed out in its issue of October 2, 1886, page 381, the chief causes which give rise to the production of unsatisfactory papers and their equally unsatisfactory discussion, while the author, in the same article, suggests a practical and efficient remedy for this evil. I cannot, however, agree with him when he asserts that: "To accomplish these results requires no change in the by-laws or organization of the Sections of our Association, but simply a better appreciation of the duties devolving upon the officers of the Sections and those who prepare papers." The fact that the duties required of these officers have not been generally so performed as to yield satisfactory results, should, I think, be accepted as argument in favor of some modification of the by-laws governing their selection, whereby we may secure some additional guarantee for a more efficient performance of their official duties. The new departure adopted at the last meeting of the American Medical Association, by which the nomination of the officers for the Sections is now made in these bodies, *is a modification in the wrong direction*. This system is open to all the objections which can be urged against our political primaries, as they are generally conducted in our large cities. Can it, therefore, be reasonably expected that it will give us efficient officers? Let us demand of our Sections work which will compare favorably with that done in any of the medical organizations of this country! *Let us have good papers, thorough discussions, and full reports for publication in* The Journal. The present system of work in the Sections furnishes only the papers for publication, while the discussions—which are frequently more valuable than the essay—are never fully reported by the Secretaries, and often not at all, and consequently cannot be printed in our Journal.

This omission is so important in all its bearings upon the American Medical Association that it ought to be speedily corrected. *What is the proper remedy?* Is there any system of prodding whereby the Secretaries of the Sections can be prompted to the performance of their duties? The answer to these questions, I think, must be in the negative. Can we do better by the election of a permanent Secretary for each Section—or must we employ a stenographer for this work? It has been suggested to me that those who take part in a discussion should write out their comments, and thus supply these omissions; but this I regard as impracticable. In consideration of this subject it should be remembered that many of these remarks are impromptu, and are often suggested by the previous discussion, rather than by the paper itself. Consequently, it is impracticable for the participants in a discussion to place their views on paper prior to leaving their homes, and during the few days devoted to the meeting of the American Medical Association the time and thoughts of these gentlemen are too much engaged with other matters to reasonably expect them to supply this deficiency. Neither are the conditions for this work more favorable immediately after their return to their homes, where they are apt to find business engagements more pressing on account of their recent absence, and before the convenient time would come for the per-

formance of this work, the comments would have possibly been forgotten by the individual who was expected to write them out. However, a modification of this system has been ound to work very well in some Societies where the Secretary supplies every participant in a discussion with a printed abstract of his remarks, with a request to make corrections and supply deficiencies. Very truly yours,

B. A. WATSON, M.D.

Jersey City, Oct. 23, 1886.

SHORTENING OF BONE IN DESTRUCTION OF SOFT PARTS.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—Seeing that in these days priority is considered of so much importance, may I be allowed to point out, that though Dr. Martel, of St. Malo, as mentioned in your issue of August 14, (p. 176), may have been the first to conceive the idea of removing a portion of bone in order to facilitate cicatrisation in cases where there is extensive destruction of soft parts, he was not the first to perform or put on record such an operation. It was done in the Royal Infirmary of Edinburgh, in May, 1885, by Mr. Joseph Bell, in the case of a patient, who, during a severe attack of phlegmonous erysipelas, lost the greater part of the skin of the inside of the right arm from the posterior fold of the axilla, down to within three inches of the wrist-joint. He was sent into the Infirmary for amputation, his doctor considering it impossible that such a sore could be healed. Mr. Bell being loth to sacrifice the arm, tried skin-grafting, with the result that cicatrisation progressed till only a wound about 3 inches long by 1 broad, remained on the inside of the elbow-joint. As this refused to heal further, Mr. Bell made up his mind to shorten the arm by removing a portion of the humerus. On May 27, 1885, about eight months before Dr. Martel's operation was performed, the lower three inches of the bone, including the condyles, cartilage and also the olecranon were removed. The result was a complete success, the patient recovering with a useful arm, soundly healed, with full flexion, extension, pronation and supination. The case was recorded in the *Edinburgh Medical Journal* for September, 1885.

I am, yours faithfully,

J. MAXWELL ROSS.

Edinburgh, Sept. 9, 1886.

NAPHTHALINE IN RENAL AFFECTIONS.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—I noticed in a recent number of the *British Medical Journal*, under the head of Correspondence, the following: "M. de Pezzer treats certain renal affections with naphthaline, especially those that are accompanied with difficult micturition; and, when fetid urine is passed, the results are generally good. In pyelonephritis, M. de Pezzer gives a gramme and a half, also in cystitis and prostatitis, with retention of urine, likewise for stricture complicated by fistula." The above, unfortunately, has been quoted by several of our American journals.

To those who are not familiar with the action of naphthaline on the urinary organs I deem it my duty to say that if employed in the conditions recommended above by M. de Pezzer, even in much smaller doses—5 grains—it quickly excites intense irritation of the urinary passages. I have more than once observed the most violent cystitis excited by 5-grain doses of naphthaline. In one instance two 5-grain doses brought on violent vesical tenesmus, backache and fever, the vesical spasms recurring every fifteen minutes for two days, and the cystitis failed to yield to the ordinary measures for nearly two weeks.

In conditions of perfect health the urinary organs will often tolerate the use of naphthaline in considerable doses when given by the mouth; but I should especially avoid its administration in the conditions named by M. de Pezzer, ample experience having proven to me that in such conditions its action is most pernicious. CHAS. W. PURDY, M.D.

163 State St., Chicago, Oct. 21, 1886.

MISCELLANEOUS.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM OCTOBER 16, 1886, TO OCTOBER 22, 1886.

Capt. Daniel Weisel, Asst. Surgeon, relieved from duty at Ft. Fred Steele, Wyo., and ordered to proceed to and take station at Ft. McKinney, Wyo., reporting to the commanding officer of that post for duty. (S. O. 135, Dept. Platte, Oct. 15, 1886.)

First Lieut. Guy L. Edie, Asst. Surgeon, having returned from detached service in Dept. of Arizona, will join his station at Ft. McIntosh, Texas. (S. O. 144, Dept. Texas, Oct. 13, 1886.)

First Lieut. Alonzo R. Chapin, Asst. Surgeon, relieved from duty at Ft. Laramie, Wyo., and ordered to Ft. Washakie, Wyo. (S. O. 137, Dept. Platte, Oct. 19, 1886.)

First Lieut. Francis J. Ives, Asst. Surgeon, in obedience to instructions received from the division commander, ordered to report in person at hdqrs. Dept. of the Platte, for duty. (S. O. 146, Dept. Texas, Oct. 16, 1886.)

First Lieut. Wm. P. Kendall, leave of absence extended fifteen days. (S. O. 239, A. G. O., Oct. 14, 1886.)

First Lieut. W. B. Banister, Asst. Surgeon, assigned to duty at Ft. Wingate, N. M. (F. O. 97, Dept. Arizona, Sept. 29, 1886.)

First Lieut. Chas. F. Mason, Asst. Surgeon, relieved from temporary duty at Ft. Verde, A. T., and ordered for duty at Ft. Huachnea, A. T. (S. O. 99, Dept. Ariz., Oct. 12, 1886.)

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED OCTOBER 23, 1886.

Urquhart, F. M., P. A. Surgeon, relieved from duty at Cape Charles Quarantine, to proceed to Washington, D. C., with Str. "Woodworth." Oct. 20, 1886.

Wasdin, Eugene, P. A. Surgeon, promoted and appointed P. A. Surgeon, from Oct. 1, 1886. Oct. 20, 1886.

Williams, L. L., Asst. Surgeon, granted leave of absence for three days. Oct. 16, 1886.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, NOVEMBER 6, 1886. No. 19.

UNITED STATES ARMY MEDICAL DEPARTMENT

ORIGINAL ARTICLES.

THE ETHICS OF ABORTION, AS A METHOD OF TREATMENT IN LEGITIMATE PRACTICE.[1]

BY J. E. KELLY, F.R.C.S.I., M.R.I.A.,

OF NEW YORK.

LATE SURGEON TO THE JERVIS ST. HOSPITAL; PROFESSOR OF SURGERY, ETC., DUBLIN, IRELAND.

The object of this paper is to investigate the ethical relation of the physician to the production of abortion in legitimate practice, and to consider his duties and responsibilities, when the question would intrude itself without the possibility of evasion, as in those cases of deformed pelvis and uncontrollable vomiting in which the operation is regarded as the last hope of the afflicted female.

Owing to the recognized and stable position which abortion has attained in therapeutics, I have refrained from questioning its claim to be classed among the resources of medicine, and I have also excluded the consideration of its criminal or felonious aspect, much as I may marvel at the prevalence of a horrible crime which is devastating this fair land, and curtailing by the million, the development of its population and its power. This aspect of the subject has been treated by many able writers, whose experience, naturally, has been far greater than that which has been afforded me by the revelations attending a comparatively short residence in Boston. I have endeavored to avoid, as far as it is possible in dealing with a subject so involved, all arguments based upon the doctrines of any particular creed, as well as any special reference to medico-legal authorities, because I wish to induce my audience to approach the subject dispassionately, and to permit each individual to reflect upon it independently of the preconceptions derived from religious teachings and professional prejudice. In the complex conditions of modern civilization the most honorable and humane men are frequently constrained by their surroundings to entertain views and to perform acts from which, upon consideration, they would shrink aghast. This insensibility is largely the result of the accretion of thought and the consequent growth of habits and popular beliefs; of the confusion of the relative bearings of associated ideas, and the resulting perversion of personal opinion and human sympathy. We perform many acts of injustice and cruelty owing to the difficulty of disentangling the great underlying principles, and in the struggle for existence, which suppresses all tendency to introspection, we are precipitated into psychological quagmires by custom, confusion, and self-interest. Such, I am satisfied, is the condition of the professional mind in relation to abortion, and I write this paper for the purpose of inducing the thoughtful physician to reconsider his duty and responsibilities, as well as to investigate the basis of the popular idea, that owing to the adoption of the most humane calling, a physician should be expected to produce abortion at the behest or for the benefit of any individual. I have appended a few suggestions indicating a possible method of relieving the profession from this unjust and odious responsibility, while extending to the parent and the fœtus the fullest measure of human justice.

As a preliminary to the consideration of the "Ethics of Abortion" it is necessary to recall the salient points relating to the vitality and the individuality of the fœtus, and to endeavor to determine at what point of intra-uterine life it attains a right to be regarded as a fellow mortal. It is unnecessary to remind you that as physiologists we cannot accept the dictum of Aristotle, who held that the fœtus did not attain viability until the fortieth day after the fruitful coition, neither can we coincide with those legal authorities who hold that the *human* offspring is not a *human* being until it ceases to be *pars viscerum matris*, and is completely extruded from the body of the mother. It is satisfactory to know that the definition is not universally accepted, many judicial writers regarding it as erroneous and productive of crime, owing to the immunity from punishment which it affords to the evil-doer. On the other hand it is interesting to discover that theologians and biologists agree upon the period at which independent life becomes the attribute of the fœtus. The former hold as a dogma, that with the act of impregnation, instantaneously originates an absolutely independent life which confers upon the individual the indestructible soul, with all its associated rights and responsibilities, while the latter insist that at the moment of the fusion of the male and female germs vitality is established and the essential components of the mature individual are represented, the development which subsequently elaborates all the structural details proceeding by the innate differentiation of the impregnated ovum.

I would remind you that at a very early stage of the so-called vegetative life of the fœtus the essential characters of the vertebrate animal appear in

[1] Read before the Gynecological Society of Boston, Sept. 9, 1886.

rapid succession to the primitive groove which presents itself in the blastodermic membrane within a few days of impregnation. The vertebral column appears in the first week and arrives at the cartilaginous stage in the sixth; the intestinal tract is recognizable in the second week; the heart and lungs are visible in the third week and the duplex character of the former is apparent in the seventh; the cerebro-spinal centres appear in the third week, the brain being distinguishable in the fourth. This characteristic human organ is rapidly developed, and in the fourth month it differs only in size from its condition at birth, while the organs of the special senses as well as the sympathetic and sensori-motor nerves are developed simultaneously with the brain.

We must remember that immediately after impregnation, vital phenomena are manifested in cell-proliferation, differentiation, nutrition and organization. With the exception of respiration, all the functions are performed early in fœtal life: the heart pulsates; the circulation is complete and independent of that of the mother; the intestines contract and the fæces are expelled; urine, as well as bile and the other intestinal fluids are produced; the skin develops hair and epithelium, while its secretions are produced in abundance. At a very early period we recognize the physical conditions essential to the manifestation of the simpler nervous phenomena, namely, a nervous centre connected with afferent and efferent nerves. In the fourth or fifth month mobility is very apparent in the well-known and complex symptom of "quickening," and from that period we have ample proof of reflex and, apparently, of spontaneous or sensori-motor phenomena. If we coincide with Locke as to the capacity for ideation which infants possess, it is difficult to deny similar powers to the fœtus immediately before birth, and still more so to define the dawn of sensation and volition in an individual possessing all the essential organs in a condition differing only in degree from their more mature development. The capacity of the fœtus to perceive pain is impossible of proof, yet it is but fair to recognize that this power is contemporaneous with the development of the sensory zone of the cerebrum, in the fourth month. Consequently we may reasonably conclude that at least after this period, abortion is a source of suffering to the fœtus proportionate to its age and the violence employed in the operation. The conclusion at which we must arrive, a conclusion corroborated by the teachings of religion, is that from the instant at which impregnation occurs and the ovum receives life, the fœtus is human, and at all periods differs in degree and not in kind from the infant and the adult. Therefore, we must regard it as a "human being" with an inalienable right to life, and that its destruction is homicide.

If you permit me to remind you that homicide includes the destruction of human life under every possible circumstance, and that it is divisible into justifiable, excusable and felonious, I shall endeavor to assign to abortion its proper position in this category. Here I may mention that for the sake of brevity and precision I have adopted the legal signification of "Abortion" which includes the destruction of the fœtus at all periods and under all circumstances between conception and "full term." Justifiable homicide comprises all those cases in which life is voluntarily destroyed owing to a motive which renders the act meritorious, as in warfare; in obedience to the command of a properly constituted authority; by an official in the performance of a duty imposed upon him; in the prevention of forcible or heinous crime, or for the protection of the life or honor of the slayer or of some person dependent upon him. The justification is, however, limited by the most stringent conditions, and to slay the greatest malefactor extra-judicially is wilful murder. A judge without a commission from the authorities cannot command the execution of a criminal even after the most impartial trial; the execution must correspond accurately with the sentence. A homicide committed by an officer of the law must be absolutely necessary for the performance of an imposed duty; even an individual in self-defence or interfering to avert a great crime, must have adequate motives for his action. Any departure from these conditions converts the act into wilful murder. Homicide is excusable when it is caused by mischance or accident, except when the slayer manifests a wanton disregard for the safety of others; and when the life or valuable property of the slayer, who must not provoke the affray, is in imminent danger. Felonious homicide is always wilful murder, or murder of the first degree, unless alleviated into manslaughter, or murder of the second degree, by being the involuntary and unfortunate consequence of some act not strictly lawful, or occasioned by some sudden and sufficient provocation. Wilful murder is characterized by premeditation or malice aforethought, which, among many other conditions, includes the intention or, even without the intention, the knowledge of the liability of the act to kill or injure any person though that person be other than the victim of the violence.

Abortion is not justifiable homicide because it is not commanded or permitted by any authority, the law forbidding it under every circumstance, and all Christian religions agreeing in refusing to countenance the deed. It is not decreed by a legal tribunal or committed by a specially commissioned officer of justice in the performance of a necessary duty, or by the operator as a public executioner. It cannot be said to prevent the fœtus from committing a violent or heinous crime; the life, honor, or property of the physician or that of any one having an ethical claim upon him for protection is not in danger. In addition, it is obvious that the restrictions which qualify the privilege are also in full force against the act. Abortion is not excusable homicide because it cannot be the result of mischance or accident; it is not performed in self-defence by the physician, nor can the contingency be considered as unprovoked by the parent. Abortion cannot be held to be manslaughter because the very nature of the case demands grave premeditation and definite plan of action, which constitute malice aforethought; sudden and sufficiently violent provocation is impossible on the part of the fœtus, and abortion is performed with the obvious intention to commit an aggravated felony, and the

operator has a perfect knowledge of the fatal nature of the act. Thus, presenting all the essential conditions, we must look upon abortion as nothing less than wilful murder. But is it not still a greater crime? Crimes are divided into natural and unnatural, the latter consisting of all those acts which are contrary to the great fundamental and natural instincts of self-preservation and reproduction of species. Abortion is an act which is directly antagonistic to reproduction, and as such, like suicide and other crimes which are unnamable, it is unnatural. Consequently it is a greater crime even than wilful murder; a

"Murder most foul and most unnatural."

We shall now consider the relations of parents to their offspring, and the foundation of their claims to the life which they have conferred. Divesting this gift of its inscrutable and preternatural qualities, let us regard it in the light of an ordinary worldly benefaction. According to the statutes regulating Ownership, when a gift is of such a nature that it cannot be formally bestowed and accepted, any act conferring upon the recipient or donee the power of using the article constitutes him the absolute owner. Apparently this is the statute which approximates most closely to the transference of life from the parents to the fœtus. Possession is another legal basis of ownership which, for the prevention of injustice, throws the onus of proof on the claimant, and, in addition, as the transmitted life is neither real nor personal property, a claim to its resumption cannot be based upon any existing law. The gift of vitality, which is essential to the existence of the recipient, is voluntarily or thoughtlessly discarded by the parents in the pursuit of pleasure and the gratification of a passion. The donors must be held to be cognizant of the probable effects of this act, and the deed is ratified by being sealed with the image of God which conveys to the fœtus the infinitely greater gift of the immortal soul. Consequently the life must be regarded as the inalienable and lawful property of the recipient, who can be deprived of it only by an unjust and despotic act. Such are the usual conditions under which life is transmitted from the parents to the offspring, and for the gift the latter appears to be under no moral obligation, and least of all that of surrendering it. Filial duty is rather the result of subsequent solicitude and parental services which, accumulating during the periods of infancy and adolescence, render the claim of the parent upon the life of the offspring directly proportionate to its age. However, if we admit for a moment the right of the parent to the life of the offspring, it is easy to conjecture many cases after birth in which the resumption might be defended by all the arguments used in favor of abortion, in addition to the other considerations which I have just suggested. Let us assume, for example, that a parent reduced by hæmorrhage has, humanly speaking, but one chance of life, that by transfusion of blood, and that the only available source is her infant, to whom the abstraction of the requisite amount would be, without question, necessarily fatal. It may be contended that in this instance an essential element is absent, namely, that of mutual danger and the necessary forfeiture of both the lives if one should not be sacrificed. Let us modify the situation but slightly by supposing them to be famishing castaways in mid-ocean, and that the parent sacrifices her child for her own sustenance. Then, indeed, the right of the mother to kill her offspring with the object of saving her own and, in her estimation, the more valuable life, must be regarded as at least as well founded as is that of the mother who demands the destruction of the child within her womb to free her from the fatal consequences of her voluntary act. A parallel contingency in real life occurred recently which resulted in the trial of two men for the murder of their companion. They were starving at sea in an open boat, and to prolong their own lives by drinking his blood, they hastened, by a few minutes, the death of an expiring boy by cutting his throat. After a most exhaustive trial, in which the case was argued by some of the most distinguished lawyers at the English bar, they were found guilty of wilful murder and sentenced to suffer the extreme penalty of the law.

Of the many arguments which are advanced in favor of abortion, that which appeals most strongly to the sense of the community is the propriety of preserving, at any price, the life of the mother, who is frequently a loved wife, a valued friend and the inestimable centre of a family circle. This is a plea which I should be the last to reject, but we must not permit any collateral considerations to blind us to the object of our investigation, namely, to determine the fullest measure of justice to which the mother and the fœtus are entitled and the position of the physician in relation to the performance of abortion. It is often contended that the undeveloped condition of the fœtus and its dependent and defenceless state detract from its claim to existence, but if we exclude the element of birth this is an argument which with equal propriety may be advanced against the rights of many adults, most children and all infants. Mental deficiency might be pleaded with equal justice in defence of the murder of many of our fellow-creatures, as the imbecile, the insane, and even the comatose, but, far from extenuating the act, their condition only aggravates any violence which is offered to them; while monsters, the cyanotic and the victims of arrested development could be as justly destroyed on the ground of incomplete physical conformation as the immature fœtus.

By a modification of the arguments which are based upon the shifting and delusive assumption that abortion is sanctioned by being conducive to the benefit of society, it would not be difficult to defend a proposal for the stamping out of virulent epidemics, such as cholera and yellow fever, by the killing of those who are first stricken with the disease. Another defence of abortion is based upon the futile and deceptive comparison of the relative value of the lives of the mother and fœtus. This is but an effort to contrast the known with the unknown, for the natural development of this unborn being may possibly result in a career greater than any with which the old world or the new has ever yet been blessed, greater even than that of a Cæsar or a Socrates, an

Aquinas or a Washington. It must be acknowledged, however, that the approximate value of human life is based upon its probable duration and the estimate of society. If we accept as a test the probable duration of life, we must decide in favor of the fœtus, for although the probabilities are greater in a child of ten years than in an unborn babe, the latter, owing to the low mortality in pregnancy and parturition, has a better prospect of life than any adult. Assuming that the estimation of society or of the friends be accepted as a basis of judgment and action, almost invariably the mother's life will be that which the physician will be implored to preserve. It is possible, however, that in rare instances, as when a great inheritance, a title, or a dynasty depends upon a child's life, he may be commanded, at his peril, to sacrifice the mother and save the child. Law and and religion are opposed equally to both the acts. Custom is more tolerant of the fœticide, but expediency, which is the sole sustainer of abortion, sometimes may vary its verdict and declare itself favorable to the preservation of the more valued, even though the younger, life.

It may appear to the casual or superficial thinker that the mother, at least, is justified by the first law of nature to destroy, by her own action, the life of the fœtus, if she possess the requisite knowledge and skill, but we must remember the conditions which limit this natural right. The slayer must not provoke the affray or the "difficulty," and the Catholic doctrine adds the proviso that to justify the killing the victim must be an "unjust aggressor." Neither of these conditions is fulfilled, because the mother is generally a consenting and often an inciting party to the act of conception, and the proverbial innocence of the "unborn babe" makes aggressive injustice impossible. Therefore the mother has no right to destroy her offspring with the object of preserving her own life. The father has still less justification for interference, because, although it is his duty to protect his wife, he, at least, has been voluntarily accessory to the originating act, and his privileges are in other senses more limited than those of the mother.

We have considered the relations of all the individuals implicated in an abortion, with the exception of the physician, who must act either as a skilled agent or as a principal. If we regard him as an agent who has been engaged to perform a specific act, his rights and privileges cannot be in excess of those who employed him; and if, as I have endeavored to demonstrate, the mother or father have no right to destroy or to engage another to destroy the fœtus, the physician must act upon his own responsibility, and we shall proceed to investigate his position. The duty of a physician may be summarized thus: He must perform every just and lawful act which is essential to the life and conducive to the physical welfare of the patient whose care he has undertaken. Let us consider for a moment the responsibilities which he incurs in producing abortion. He decides that the procedure is essential, notwithstanding the probability that, owing to the rarity of the operation, his experience may be defective and consequently his judgment erroneous and misleading. Here I would remind you that in the practice of the more distinguished obstetricians, the proportion of intentional abortion appears to be inversely to their years, and it must be remembered also, that although the decision may occasionally be in the hands of an able and experienced physician, under existing conditions it is determined, more frequently, by the ordinary practitioner, who is often but poorly equipped for such a solemn responsibility. In addition, the case is decided not even by an honest, if ignorant, practioner, but too frequently by the unreliable followers of one of the many "pathies" which help to swell the American death-rate, or by the incapable and unconscionable quack. The physician undertakes an operation which is necessarily destructive of one human life, and, owing to its dangerous nature, most hazardous to another, and possibly, as in cases of multiple conception, the operation may result in the death of three, or even a greater number, of human beings. Unless he permits his own judgment to be subordinated to the equally fallible human opinion of his employer, he voluntarily undertakes a deed sanctioned by no law, but always regarded, often perhaps too impassively, as a felony, and punishable accordingly. Without any commission, and frequently prejudiced towards a certain view, he constitutes himself the judge of a court from which time admits of no appeal; before him a dumb and defenceless prisoner is arraigned for the intent to inflict an injury of which it is unconscious; he ignores that impartiality so essential in an arbiter of life and death, and is simultaneously the judge and the counsel for the prosecution; he decides adversely to the accused, condemns him to the most frightful and painful death, and lastly, as the executioner of his own sentence, he sends an unborn fellow-being from a world he has never seen into that "great Beyond," which the strong man and the wise man dread to enter even, after the most prolonged and anxious consideration. In the saddest chapter of the saddest history, that of the Irish rebellion of 1798, one figure towers aloft by reason of his stature and his fiendish cruelty. His literally veracious epitaph ran thus:

> "Here lies that brutal Hempenstall,
> Judge, jury, gallows, hangman, all."

I cannot discern how he differed from the physician who produces abortion, except that Hempenstall held a special commission from the King of England authorizing his brutal iniquities, he was maddened by his turbulent surroundings and excited by the inhuman antagonism which resulted from his victims being matured men, capable of resisting him, and of being possibly all that his education and his prejudices depicted them, while the physician has no warrant compelling him to perform the deed, his victim is a defenceless and unoffending fellow mortal; his surroundings and his teaching tend to calm deliberation and just conclusions, his duty is to preserve the life of his patient by every just and lawful act, and, mark you, all mankind who, formally or informally, come under his care, are equally his patients, the fœtus as well as the mother, and if he would not be a Bravo, neither fear nor favor nor remuneration can ever justify the sacrifice of the life

or interest of one patient for the pleasure or advantage of another. Finally, that great dictum which underlies all true religions, "Do no evil that good may follow," deprives him of every flimsy and inadequate plea suggested by that insolence of ignorance so essentially a human attribute, reaching its highest development in the pursuit—here, it can hardly be regarded as a profession—which often, with the most inadequate preparation, arrogates to itself and has conferred upon it, by an otherwise rational public, the greatest worldly responsibility.

While personally repudiating all sympathy with abortion in any form, I shall conclude with the following suggestions, which may be justified by the principle that "new circumstances demand new laws." The prevalence of abortion as an established procedure in modern medicine, the freedom with which it is practised and the enthusiasm with which it is advocated by gentlemen of great professional influence in this city, some of whom I heard in public indignantly denounce other individuals, medical, lay, and clerical, because they conscientiously refused to assist or sanction the destruction of the embryo, are the circumstances which convince me that no existing enactment, either human or divine, can prevent many physicians from practising abortion in good faith, and consequently that some "new laws" are needed which shall tend to limit its application to the minimum, and to alleviate, in the juridical sense at least, the repugnant act of abortion into "justifiable fœticide." Such a restriction, while affording every advantage compatible with justice to the mother, should insure to the fœtus every possible security by adequate investigation and representation, in accordance with established legal procedure. Every court or tribunal consists of three essential elements, the plaintiff, the defendant, and the judge. The two first-named are frequently permitted to "appear" by proxy, and generally their interests are guarded by skilled advocates. In criminal law, where a fourth element is introduced in the person of the executioner, the greatest precautions are exercised to secure for the most notorious malefactor every advantage which can accrue from thorough investigation, the admission of favorable testimony, and the assistance of able lawyers, who are frequently supplied by the authorities. Even when a cadaver is discovered the State institutes a most exhaustive investigation in order to determine the circumstances connected with the death, and the climax is reached when the Law, having executed a criminal, makes a a formal inquiry into the cause of his death!

If such care be bestowed upon the elucidation of the causes of death and the equitable trial of abandoned criminals, it is natural that we should inquire if the State does not neglect its duty by permitting this notorious and daily destruction of human life without a rigid investigation and the assertion of its unquestionable right to veto or to sanction each case, according to its merits. If the authorities could be awakened to the necessity of establishing a tribunal for the purpose of restraining those practitioners who are not deterred by ethical considerations or religious scruples, its construction should be an easy matter for the practical legislator. According to precedent it might consist of the presiding officer or judge, a physician of the highest professional probity and juridical reputation; an able practitioner as the counsel or defendant of the fœtus, the parent being represented by her personal medical attendant, and the fourth member of the court would be the executive officer. That such an officer as a State abortionist should be appointed is apparent, owing to the many instances in which no power could compel the attending physician to perform so repugnant an operation, while even if he were willing to undertake it, his opportunities might not afford him the essential skill and experience. It would hardly be in keeping with that rigid impartiality so desirable in a presiding officer if, as the executioner of his own mandate, he were to perform an operation for which he would necessarily be remunerated; neither would it be in keeping with the function of the physician to whom we have alluded as the representative or defender of the fœtus, to destroy the life of his client. With such a tribunal the operation would be shorn of some of its most objectionable features.

A restraint would be imposed upon those who regard their personal judgment as all-sufficient and final, if the practitioner were compelled to report to the executive those cases in which he considered abortion essential; the members of the noblest profession would be protected from a degrading demand to commit a felony; the popular opinion which ascribes to the medical profession the odium of encouraging abortion, owing to the levity with which physicians frequently discuss the subject, would be exploded; without the sacrifice of dignity or emolument the physician would transfer to the strong arm of the law a great responsibility; without any infringement of her liberty the patient would have the advantage of supervision and treatment by skilful and experienced physicians in consultation with her own attendant; and finally, two classes of criminal abortion which occur but too often and without attempt at concealment, would be eliminated.

The first is that in which the patient, anxious to evade the trials of maternity, imposes upon the inexperienced or careless physician by simulating the alarming symptoms of pernicious pregnancy until he is persuaded that abortion alone can preserve her life; in the other class the practitioner, more or less above suspicion, justifies or cloaks a criminal abortion by averring that the evacuation of the womb is essential. An instance illustrative of one or other of these classes was disclosed in the course of a notorious divorce trial which recently scandalized this city. The attending physicians deposed that the abortion was essential, while other witnesses asserted that it was performed to avoid the expense and inconvenience of motherhood. A practical step towards the suppression of, at least, some forms of fœticide, would be inaugurated by rendering its performance more dangerous to those abandoned wretches who abuse the most precious human instinct, dishonor the fair fame of medicine, and defile the national reputation by their dastardly and incredible outrages against the sanctity of life.

THE EARLY DIAGNOSIS OF PREGNANCY.[1]

BY E. S. McKEE, M.D.,
OF CINCINNATI.

The opprobrium obstetrici is our inability to make a prompt and positive diagnosis of pregnancy in the earlier months. How often are we confronted by one of our female patients with the query, "Am I pregnant?" Many a woman imagines that her doctor can look at her and tell whether she is pregnant. How often great things depend upon our decision. Our patient may wish to take a long and long-looked for journey, but will defer or abandon it if she is pregnant; or other affairs of import, as the question of operative interference may depend on our answer. In fact, fortunes, empires and lives hang on our decision. She who fears she is to be a mother, though not a wife, thinks her case of no less importance.

It is in the first months of gestation that the physician needs reliable evidence, hence we should endeavor to add to the means already at our disposal any symptoms indicative of the presence or absence of pregnancy. It is with this in view that I will endeavor to rehearse the symptoms, confining myself to those of the first trimestrium. Those symptoms well known will receive but passing comment. Those newer and as yet not fully established in our textbooks, shall have more attention.

First in the natural order, we consider the signs which may occur at the time of conception. Aristotle taught that a woman had conceived if there was no return of semen after sexual intercourse, and if the penis was unusually dry when withdrawn. Such is also the universal opinion of shepherds. Hippocrates said that the eyes sank in their sockets. Democritus, that the neck swelled. These, however, are of little value. Probably the only sign of any worth is the peculiar voluptuous sensation, and the more general erethism experienced by some females on fruitful intercourse. Many think they can tell positively by their feelings when impregnation has taken place. Though they may be correct in some instances, yet it is quite probable that in many others they are not.

Among the first symptoms of pregnancy are absence of menstruation, nausea, and vomiting, slight flatness of the hypogastric region, depression of the umbilical ring, tumefaction, accompanied by sensations of pricking and tenderness; increase in size and weight of the uterus; increased pulsation in uterus and vagina and decensus uteri; womb is less movable, uterine walls have the consistence of caoutchouc; the neck is directed downwards, forwards, and to the left. The orifice of the os tincæ is rounded in primaparæ, but more patulous in others who have had children. A slight softening of the mucous membrane of the lips and an œdematous appearance of the same. Various neuralgias and neuroses, disorders of digestion, and other symptoms, are noticeable. Many women have an abundant leucorrhœa of white or greenish color (granular vaginitis). What may be said of the first of these, absence of the menses, may be said of them all. There are numerous exceptions to any one, and the same condition may be produced by other causes. Hence very unreliable testimony. Thus, an ulcerated os may perfectly imitate the velvety feeling of the cervix; the breasts may enlarge from mere uterine irritation; and the womb may hypertrophy from congestion. Jacquimier noticed the slate, or purple, color of the vagina from embarrassed circulation in the venous capillaries of the mucous membrane. However, patients with uterine tumors, especially old women, and those who have piles and varicose veins on the legs, may have a violet colored vagina. The same may even be caused by impacted fæces; in fact, by anything which seriously impedes venous circulation. The smooth anterior vaginal wall mentioned by Barnes may also be caused by a uterine fibroid. So it is the size of the uterus, not its contents, which causes this condition.

Dr. Joseph Taber Johnson, of Washington, in a paper before the American Medical Association, in 1881, suggested that some of the principles of the telephone might be utilized in hearing the feeble sounds of the fœtal circulation much earlier than is now possible. I do not know that any one has pushed this matter further. Certainly here is room for investigation. Dr. Routh was the producer of the instrument called the vaginoscope, or more properly, using a word from the Greek, coleoscope; an instrument consisting either of the common stethoscope or the simple or double instrument with elastic tube. To the distal end of this is affixed a wooden speculum. Sometimes he used a solid tube made of gutta-percha or wood in lieu of an elastic one. He thinks glass would be better, as it is a very good conductor of sound, and rather increases the pitch, is readily kept clean, and does not make a noise when rubbed against the clothing. The flexible tube may be passed per anum. He reports a number of cases which seem to bear him out. Verardina has also contributed largely to this subject. Dr. E. Kennedy, of Dublin, gives examples in which he has been able to hear the placental souffle at the twelfth, eleventh, and once in the tenth week. He has not been confirmed by others. Cazeaux says the fœtal heart has been heard as early as the third month.

Dr. S. C. Dumm, of Columbus, Ohio, published in 1878 a new sure diagnostic sign of pregnancy. It consisted in finding the odor of the vernix caseosa upon the finger after a vaginal examination during the first or any subsequent month. In a recent communication to me the doctor says: "I think it is one of the clearest on the list, and if carefully paid attention to will reveal the condition inside of four weeks."

Dr. Eugene C. Gehrung, of St. Louis, wrote of palpating the ovum with the point of the sound. He says the sound should be used very gently and by skilled hands, to which we will all agree, if we consent to its use at all. It gives the sensation of pushing the sound against a bladder filled with water. This is not a positive sign, for in the earlier weeks of pregnancy the ovum is only attached to parts of the uterine walls, and the sound may easily glide by.

[1] Read in the Section on Obstetrics at the Thirty-Seventh Annual Meeting of the American Medical Association.

This same sensation might be produced by a polypus in the uterine cavity, as well as by some other foreign bodies. These cases, however, can generally be differentiated by the history. In a recent private letter Dr. Gehrung says that he proposed this not as an additional sign of pregnancy, but as a safeguard to the gynecologist. It will often save him the humiliation of causing an abortion. He says it is not to be thought of except as a last resort. The earliest period at which the sign has given him warning is at about the fifth or sixth week.

Kyesteine has been the means of determining many an early diagnosis, but still its presence is undoubtedly caused by certain pathological conditions. It has also been found in women not pregnant, and even in men.

M. Pinard, in 1877, treated of a swelling and softening of the gums in pregnancy, and later it is made the subject of an inaugural thesis by Didsbury. This begins about the second month, and is described by Didsbury as consisting of three grades. In the third the inflammation is so marked that it gives a violet red color to the gums. They are puffed out, and the interdentary spaces stand out in marked relief. The tartar and the epithelial débris collect about the necks of the teeth, and the inflammation extends to the alveolar periosteum, when the teeth become denuded and finally fall out in a perfectly healthy condition. This gingevitis is located especially on the anterior and convex portion of the maxillaries. It is rare to see it go beyond the canines. The other symptoms which present, are pain and local hæmorrhages.

Jorisenne, in 1882, stated that he had discovered a new sign of pregnancy, and claimed to be able to diagnose that condition when there was no other sign present than the absence of one period. Long ago Graves formulated the law that in cardiac hypertrophy the radial pulse remains constant whatever the position of the body. Larcher and Ducrest, in 1828, described a hypertrophy of the heart which occurred in pregnant women. Larcher claimed that the arterial tract throughout the body elongated to supply the fœtus. This hypertrophy seems to be constant and considerable, and to be a purely physiological alteration to meet the increased exigencies of the case. The hypertrophy is limited to the left ventricle. Blot estimated the increase at one-fifth the whole weight of the heart. Löhlein, with more recent investigation, thinks the hypertrophy less than one-fifth. Receiving Graves's doctrine, Jorisenne found that whilst in the unimpregnated woman there is a variation of ten to twenty beats in the radial pulse, from change of position, in the impregnated it remains the same. He advises to proceed with deliberation, counting the pulse a full minute lying, sitting and standing, allowing a time between each change of position for the circulation to regain its equilibrium.

Dr. H. D. Fry has investigated this symptom fully and reported his cases. He found that the pulse varied with almost every change of position, and that absolutely no reliance could be placed upon this symptom as a diagnostic sign of pregnancy. I have tested it in a number of cases myself with negative results. Dr. Fry has also written concerning a new early symptom of pregnancy, viz.: An increase of vaginal temperature. After discussing the question fully and relating his experiments, he arrives at the following conclusions: "That a vaginal temperature equal to or more than 99.7° is a strong presumptive evidence of impregnation; provided there are no pathological conditions of the uterus present and no increase of heat in the axilla." In a private letter not long since, Dr. Fry, after quoting the above, goes on to say: Now the results of my subsequent observations have led me to modify this statement somewhat, and I would substitute as more certain the following: "A rise of intracervical temperature to one degree or more above the temperature of the axilla. The reason is that in several instances I have found early pregnancy co-exist with a subnormal temperature in the axilla, so that while there was a difference of more than a degree in favor of the intracervical temperature, yet the latter only registered 98.4° in one case and 98.7° in another.

I have experimented, for more than a year, as to the vaginal temperature. While in many cases I have found this elevation of temperature, in as many more none could be detected; and again, elevations of temperature have been found where no morbid condition could be made out, and pregnancy was not present. As to the increase in intracervical temperature, my experience has been limited, but so far, has led me to believe it a more reliable test than the intravaginal.

To Hegar, of Freiburg, we are indebted for the new sign of great promise which bears his name. To Hegar's sign of pregnancy I had expected to devote the greater part of this paper. Owing, however, to the writings of Reinl, Compes, and Grandin, which have been so largely quoted by the American medical journals during the last two or three months, I fear I shall be speaking of something not new but quite familiar to all. This sign consists of an unusual resiliance, compressibility, softness, bogginess, yielding and thinning of the lower uterine segment; that is, the section immediately above the insertion of the ligamenta sacro-uterina. This condition is not alone present when the remainder of the body, as is often the case, is firm and hard, but also quite prominent when this is soft and elastic. The shape assumed is fan-like, or that of a balloon, more than the usual pear shape. It has also been termed an old-fashioned fat-bellied jug. This enlargement is especially marked antero-posteriorly. The change is most apparent at the middle portion of the lower segment and in the median line, the sides of the organ being much firmer and more resisting.

Compes makes the examination as follows: The thumb is introduced into the vagina until it reaches the cervix, and the index finger into the rectum until it reaches beyond the ligamenta sacro-uterina; the other hand is placed over the abdomen immediately above the symphysis and pressed down towards the finger in the rectum. The rectal finger explores the cervix and the lower uterine segment in all its parts, and lastly, the higher parts of the uterus. The ex-

amination is facilitated by pulling down the uterus with a volsella and evacuating the bladder and rectum. While this is undoubtedly a very thorough mode of examination, it is repulsive both to the patient and physician, as well as a difficult and hazardous procedure. It is certainly possible in a great majority of cases to make out all that is necessary with a finger in one of the culs-de-sac and the other hand externally. In urgent cases, where this does not satisfy the physician, it would be quite proper to make the examination as above described.

Compes has examined a number of women, found the sign present, then put them under an anæsthetic and still found it present. He says the softened and enlarged uterine segment above the cervix has often been mistaken for a tumor, and that, in fact, laparotomy has been performed under this delusion.

There are two states which may simulate this condition, viz.: distended bladder and the uterus distended with menstrual blood. A distended bladder can and should be evacuated. An imperforate hymen or vagina, or the history of the case, would soon dispel the other question. Hyperplasia would show increased density. Sub-involution increases the longitudinal as well as the transverse diameters. The obstructed circulation from an anteflexed uterus does not impart that feeling of resiliency and compressibility. In marked retroversion it is more difficult to palpate the corpus uteri, and the sign may fail. Here also it is proper to examine per rectum.

Dr. Reinl, formerly assistant to Hegar, has reported six cases; by letter he tells of extended experience as follows: "Among twenty-two cases I missed this sign but twice, and found it earliest in the fifth week of pregnancy."

Dr. Compes, present assistant to Hegar, reports eight cases.

Dr. E. H. Grandin, of New York, has reported twelve cases. In a letter to me since this report he says: "Since the writing of my paper I have had six additional cases, all corroborated, and one of these a case of retroversion. . . . Personally, therefore, I record myself as being able to make the diagnosis prior to the eighth week by Hegar's sign alone."

My experience has been so recent that many of the cases have not had time to prove themselves. I will mention but two, one in which the sign was absent, one in which it was present.

Case 1.—Mrs. B., a widow, æt. 37, came to me March 20, 1886. She acknowledged the opportunity and feared herself pregnant, not having seen her menses for twelve weeks. I examined her for Hegar's sign, but failed to find it. I told her I did not think she was pregnant. Gave her tr. ferri chloridi, and asked her to return in a few days. She returned three times, each time expressing great fears of pregnancy. Each time I examined her, failed to find Hegar's sign, assured her she was not pregnant, and continued the iron. April 1st the menses reappeared, and were normal in amount and duration.

Case 2.—Mrs. R., a young married woman, æt. 20, a delicate blonde, the mother of one child æt. 2 years. She had been absent from her husband four months visiting her parents at Washington, D. C. She last had her menses January 15, continuing five days, normal in amount and conduct. She returned to Cincinnati and her husband February 9. March 5 Dr. Ransohoff was called, and finding the case to be gynecological, referred her to me. She had not had a return of her menses since the middle of January. The nature of her case required a digital and specular examination once, twice or thrice weekly. March 10 she was slightly sick at the stomach. This had not occurred before, and did not recur, nor any other sign indicating pregnancy, besides the cessation of the menses, before the sixth week after her return to her husband. During the sixth week I made three careful vaginal examinations, and at each one was sure I found Hegar's sign present. I assured the patient that I was quite confirmed in the belief that I had frequently expressed to her, viz., that she was pregnant. On March 30 she complained of not feeling well. On the morning of March 31, the forty-eighth day after her return, she passed a large quantity of blood and a membrane, which she saved and showed me. This proved to be the major portion of an ovum, the remainder of which was found within the vagina.

Dr. Palmer, of Cincinnati, informs me that he regard's Hegar's sign as possessing the greatest value in diagnosticating early pregnancy, especially taken in conjunction with the change of position, at first sagging, then increasing anteversion at the end of the second and during the third month, both incident, of course, of the pregnancy.

As the shape of the uterus, enlarged by pregnancy, is one peculiar to that state, and is an enlargement largely confined to the body of the organ, it can thus be differentiated from the enlargements due to sub-involution, chronic metritis with hyperplasia or hypertrophy, or fibroid infiltration. The enlarged uterine body from pregnancy is likewise less dense than from hyperplasia or an intra-mural fibroid, and, to touch, presents a much greater degree of uterine pulsation.

In all these last named morbid conditions almost surely there will be a menorrhagia in some form, or a metrorrhagia, or both. It is extremely rare for a fibroid infiltration to involve both anterior or posterior walls alike; the enlargement is symmetrical.

The peculiar enlargement of the uterus described by Hegar, but noticed often by many before his description appeared, is best detected in the normal anteverted position of the uterus. Retroversion prior to pregnancy, as malposition is usually increased by pregnancy in the first month, presents conditions rendering it more difficult of recognition.

There remains to us, then, to again lament our inability, in many cases, to make a positive diagnosis of early pregnancy, to mourn the fallibility of the old and many of the new symptoms, to especially recommend the sign of Hegar, which until now has proven itself impregnable, and to plead for investigators in a field which should not be "barren or unfruitful."

VACCINATION, AND ITS PROTECTIVE QUALITIES AGAINST SMALL-POX.

BY D. H. BATCHELDER, M.D.,
OF PROVIDENCE, R. I.

Just ninety years[1] ago Jenner took virus from the hand of Susan Nelmes, who was or had been infected by milking her master's cows, and inserted it into the arm of James Phipps, a healthy boy about 8 years old. The boy passed through the several stages of vaccination in a most satisfactory manner, with pustules perfectly well developed and matured. But with this gratifying result the full test originally aimed at and so ardently desired by the distinguished discoverer, was yet but half complete. It was still needful and, indeed, all-important, to ascertain as a certainty whether or not the boy was made by this operation secure from the contagium of small-pox. Consequently, early in the following July, Jenner inoculated the boy with pure variolous matter taken immediately from a pustule. This operation was entirely abortive; not a sign or symptom of small-pox could be discovered. And I think it pertinent that May 14, 1796, be set down in the history of Medicine as the birthday of Vaccination, and its anniversary day. What the immortal Jenner did by his own hand, and sealed by his life-long and well-earned integrity, together with the then existing facts on which the discovery was based—and announced fully a century ago—should alone have been sufficient to settle the matter logically beyond a doubt. But it must still be regretted that there are still those who do not believe in vaccination. There is, in fact, quite a number outside the great mass of believers who still entertain negative ideas, and are rather skeptical as to the virus of vaccination as a protection against small-pox. And there is a larger number who are disposed—perhaps honestly—to associate with its peculiar workings within the system a large share of the morbid humors that are likely to be constitutional or otherwise; as though it sought outside of its own legitimate sphere of action some morbid ally, through which it might strengthen its power to accomplish mischief.

I now wish to record some experiments made by the writer with a view to the further substantiation of the doctrines announced by Jenner. These experiments were made twenty years ago, in April and May, 1866. They were written down as observed, and have remained under an unbroken seal until this day, May 14, 1886. I hope to prove by the result of these (I must say daring) experiments enough to convince candid minds, as I am convinced, of the fallacy and incorrectness of such vague and untested ideas. I well know that the world is not made up entirely of positives; and that there are some reasonable and tangible negatives. Yet, I am ready to say that I believe that the science of vaccination has reached a point, where it now stands, based upon experimental facts, and it is worthy of the confidence of the public. Considering the magnitude of the claim of the subject, it seems strange there could be found, after almost a century of faithful trial, one person who would have the courage to even hint at an objection that might seem plausible. No person need study the history of small-pox farther than two hundred years in the past to learn of the ravages of the disease throughout central and southern Europe, where cities and villages were well-nigh depopulated. How can such a condition compare with the present? The disease is no longer there; it has nearly lost its hiding place. Its course is easily obstructed, and if it is not entirely subdued it is in measure deprived of its former terrors. It no longer depopulates cities and communities by tens of thousands; if it find its way into a city or town its "arrow of death" may be easily unbarbed, and its poison so neutralized that it soon dies out for want of susceptible subjects.

Sixteen years ago, while in conversation with Sir James Y. Simpson, just before his death, he said that "two hundred years ago where there were one thousand deaths from small-pox there are not twenty-five now, statistically; and this difference has been the effectual result of vaccination." Sir William Stokes, of Dublin, also said to the writer in 1870, that small-pox had lost 90 per cent. of its death-rate during the past one hundred and fifty years. Is there any other way to account for this difference than by the effect of vaccination?

During the year 1865, at the close of the late war, I was in charge of the health department of the town of Cranston. I was aware that the people of the place must be liable to exposure, and at times come in unavoidable contact with persons from whom they might contract small-pox. I therefore proceeded to vaccinate the people of the town. In the town was a wealthy man who made considerable pretentions to scientific attainments, but he absolutely refused to have his children vaccinated. I therefore resolved that I would once more test the protective qualities of vaccination. The virus used for the town vaccination was obtained from Dr. Henry A. Martin, of Boston, and at that time it must have been humanized virus.

In January, 1866, small-pox made its appearance in Cranston, and during the first eight months there were twelve families that suffered more or less from the disease. In this time there were thirty-nine cases in all, with three deaths. As I had vaccinated almost all the town the autumn before, the people were, as a class, well prepared for the disease. It was a year in which a large number of discharged soldiers were wandering over the country, looking for friends or relatives. In the town was a Swedish family, consisting of father, mother, and two boys. These were visited by a young Swede who came direct from New York City; he was not well when he arrived, became worse, and when I was finally called in I found a case of small-pox, four or five days advanced, with a profuse crop of pustules on the face and body. I found that no one living out of the house had been exposed to this person, and then I put a flag on the house, and shut off outside communication.

Here, I thought, was an excellent opportunity to carry into effect my determination to test the efficacy of vaccination. The two boys in the family were robust and healthy, one 10, the other 8 years

[1] May 14, 1796.

of age. I had vaccinated them the autumn before, and it took well. On the next day, about the sixth or seventh day of the disease, finding the pustules on the face pretty well filled, I charged six quill-points from the pustules on the face. I told the mother, who, with the father, had had smallpox in Sweden, that I thought it an act of prudence to inoculate the boys. She at once gave her consent, not knowing the difference between this and vaccination. I then inserted three quills into each left arm, the quills, charged from the variolous pustules. The boys were allowed free access to the patient's room, and I made daily observations on them for eight days, consecutively.

Second day, 12 M.—No change whatever in either boy; appetite good, no fever, no pain, pulse normal.

Third day, 12 M.—Slight acceleration of temperature in the older boy—98.5; pulse 78, complains of slight pain in head and back. Appetite pretty good; slept well. There was no change in the condition of the younger boy.

Fourth day, 12 M.—No material change from the condition of the day before, save that the older boy had less pain in the head and back. Both ate and slept well.

Fifth day, 12 M.—Condition of both boys apparently natural. The older boy was in what might be called his normal physiological condition. Neither one complained of pain, both ate well; there was no fever; pulse normal.

Sixth day, 12 M.—Same condition as day before. Wounds on arms have died out.

Seventh day, 12 M.—Same condition. Both perfectly well.

I felt sure that they had been thoroughly protected by the vaccination of the autumn, as they had now passed safely through a two-fold exposure. Could there have been a more satisfactory test?

In the latter part of May, 1866, I was notified of a suspected case of small-pox. On visiting the house I found a man, a discharged soldier, who had just arrived in Cranston, suffering with small-pox, with a crop of pustules at least five days advanced. I determined to again try the protective value of the autumn vaccination. The opportunity was as favorable as the one already related. The family of the house consisted of a man and wife, and four children —three boys and a girl. The parents had had smallpox in Norway, and I had vaccinated the children seven months before, and successfully.

They were well developed, healthy and robust children, the boys being 11, 9, and 5 years old, and the girl 7. Since the outbreak of the case no one had been into the house from outside. On the second day the pustules on the face were pretty well filled, and I charged a dozen or more quills with pure viscid lymph from the pustules on the face. The next morning I told the mother that I would revaccinate the children. She did not object, and I inserted three quill points into the left arm of each child.

Second day.—There was perhaps a slight increase in the heart's action in the oldest boy and the girl.

Third day.—No. 1 (oldest boy), wounds very little reddened, and slightly elevated. Pulse 76, temp. 98.5. No fever. No. 2 (second boy) complains of some headache. Pulse 78, temp. 99, wound reddened, and surface covered with a dingy rash. Tongue slightly coated. No. 3 (girl) complains a little of headache; otherwise but little constitutional disturbance. Pulse and temperature slightly above normal. No. 4 (youngest boy) has on the arm a very light rash of a brownish aspect; complains of itching. Pulse 80, temp. 99; tongue coated; some headache and backache; not craving food. Some fever.

Fourth day.—No. 1 complains of slight pain in back. Pulse 76; temp. 98.5. Wounds a little elevated, but no perceptible fever. Takes food as usual. No. 2 complains of pain in head and back. Face a little flushed; pulse 80; temp. 99. Urine a little colored, and slightly reduced in quantity. Rash fading away. Tongue slightly coated. Goes about house and takes some food. No. 3 does not complain of any pain; head feels a little dull; wounds drying up; no fever, and but little constitutional disturbance. Pulse a little quickened, but temperature normal. No. 4. The surface is less itchy, and the brown eruption is leaving. Pulse 78; temp. 99. Wounds a very little reddened. A few pimples have appeared, two on the arm and three or four on the chest; some pain in back; urine a little reduced in quantity; but little general fever. Relishes food.

Fifth day.—No. 1 complains of no pain; has no fever; pulse 76; temp. 98.5°. Skin natural, wounds healed and scaled off. Has a good appetite and goes about house whistling. No. 2 complains of slight pains in back; some febrile action; pulse 78; temp. about 99; urine somewhat improved in quantity and color; eruption all gone; skin a little dingy; tongue cleaving a little; wounds not pustulated, but fading in color. Is about the house most of the time, and has a desire for light food. No. 3—Condition of general system normal; wounds dry and scaling off; tongue clean; pulse 75; temp. normal. She rests well and wants to eat. No. 4—Eruption all gone, although the skin still looks dingy. Pimples about the same; pulse 78; temp. a little elevated; wounds about same as yesterday. Pains mostly gone; fever much less. Is around the house and takes food.

Sixth day.—No. 1 appears well; wounds entirely healed; no inflammatory or febrile action; pulse normal; temp. normal. Prescribed a small quantity of sulph. magnesia and pulvis rhei. No. 2 is having no pain to-day, and is apparently free from fever; pulse 76; temp. 98.5; skin clearing; wounds healed and scaling off; urine becoming more normal; appetite good, and he rests well. No. 3 seems perfectly well; wounds healed and scaled off; no fever; general system in a normal condition; skin perfectly clear and healthy. No. 4 has no pain; wounds drying up, not pustulated but scaling off; pimples dry, with scales over them; febrile action has abated in a measure; skin clearer. Wants to eat, and is around the house.

Seventh day.—No. 1 is well in every respect. No. 2 has no fever, no pain, rests well and eats well; pulse and temp. normal; skin pretty clear. Ordered sulph. magnesia and pulvis rhei. No. 3 has no pain; no fever; urine clear; wounds well and smooth; tongue

clean and appetite good. No. 4—general condition normal; wounds perfectly smooth and well. Appetite good, and apparently perfectly well.

On the eighth day all the patients were well and around the house, apparently in as good condition as before the inoculation.

The foregoing embraces the history of six test cases in relation to the vicarious action of vaccine virus on the human system as a protective agent, inasmuch as it renders the system insusceptible to the primary lodgment or incubating action of the agent that communicates small-pox. I do not know that there is anything further to say than a few words necessary to clear away from the mind of the reader everything that might, unexplained, obstruct or cause to arise in his mind negative inquiries that might perhaps lead to unjust criticism. It should be distinctly understood that these six children were about what we would select as being quite as susceptible and as likely to imbibe any one of the morbific agents that represent the more virulent contagious diseases. They were, without exception, well and perfectly developed, and, as their histories showed, they had enjoyed physiological health without interruption; they were, therefore, perfectly safe and proper subjects upon which to make these tests for the purpose of obtaining incontrovertible results by experiments. In the second place, it cannot be denied that they had passed through the preparatory process of ordinary vaccination six months before in its most simple manner; and consequently were not prepared to order for such experiments, and no one had any knowledge of what might or would follow in six months.

These facts, when viewed in their proper light, at once place the whole transaction on a firm basis, and establish it as an occurrence under circumstances purely accidental. And, viewed in the above light, the matter must remain free from ordinary criticism so far as its being a fair test is concerned.

In relation to the exposures of the children during the experiments: they were of a two-fold nature. The subjects of the experiments were, after small-pox was introduced into their homes, exposed during every hour, and at a time when the disease was at its height of virulence. And secondly, no greater exposure could occur than to subject them to the introduction, into their systems, of the virus taken from the pustule. These facts must, then, stand upon a firm and well tested basis; and I hope they may be considered as a step in favor of the science of vaccination.

UNION OF A FRACTURE OF THE FEMUR, IN A GIRL OF FOURTEEN, AFTER TWO YEARS.[1]

BY S. MARKS, M.D.,

OF MILWAUKEE, WIS.

Miss J., aged 14 years, who was suffering from a fracture of the right femur, of five month's standing, consulted me on the 5th of December, 1882. Her general health seemed to be excellent; but the muscles of the lower portion of the thigh were shrunken, there was absolute anchylosis of the knee-joint, and the limb was shortened a little more than an inch. The point of the fracture was at the junction of the middle and lower thirds, where there was great mobility, but no soreness; there was little or no change in the bone.

The history of the case revealed a succession of incidents affecting this unhappy femur—two apparent fractures at an early period, with long delayed union and complete anchylosis of the knee-joint; the protrusion and removal of a section of the bone at a later period; and another fracture, still later, with still longer delayed union and the condition already described.

The history of the earlier fractures, as told by the father, is the following: When 2½ years old the girl fell from a high chair, fracturing this right thigh bone at two points—one immediately above the knee-joint, and the other some three inches higher. A surgeon immediately applied splints, but the bone failed to unite; and some six months from the date of fracture a fragment of the bone was found protruding through the flesh. It proved to be a detached section of the lower portion of the bone, some three inches long. After its removal the soft parts healed kindly, and a little more than a year after the fracture was sustained the child was able to bear her full weight upon the limb. The muscles of the thigh at this time were shrunken, the knee-joint completely anchylosed and the limb shortened half an inch. From this time on the child enjoyed perfect health, the limb giving her no trouble further than the inconvenience caused by the anchylosis. No doubt the fracture described by her father as taking place immediately above the knee-joint, was the separation of the epiphysis from the shaft of the bone.

Years later a second accident involved this unlucky femur. Thrown from a buggy when eight miles from her home, she sustained a fracture at the junction of the middle and lower thirds. This was on the 29th of June, 1882, when she was 13 years and 7 months old—about five months before she put herself into my hands. A country practitioner applied a long splint, and the next day she was driven to her home in a wagon Owing to her restlessness, the doctor found it necessary to redress the limb every three or four days. At the end of two months there was not the least union of the bone, and he discarded the splint and applied a light plaster-of-Paris bandage from the foot to the hip. For two months this dressing remained on undisturbed, at the end of which time it was split open and the limb found to be in the same condition as when it was applied. There was absolutely no trace of a union. The same dressing was reapplied and was not disturbed up to the time I was consulted.

Upon removing the dressing, five months after the accident, I found the condition already described—great mobility at the point of fracture, a shortening of the limb by a little more than an inch, and the atrophy and anchylosis which had continued from the time of her first accident. After rubbing the

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

fractured ends together with considerable force, a closely fitting flannel drawer-leg was drawn over the limb; and while extention was being made, a very heavy plaster bandage was applied, as snugly as was thought compatible with safety, extending from the foot up to and embracing the hip. After the plaster was thoroughly dried, she was placed in a wagon and taken to her home, twenty miles in the country. I directed her to move about on crutches and to bear all the weight she could upon the fractured limb. Although her father had promised to keep me informed as to her condition, it was nearly two years before I heard from the case again, and then accidentally and indirectly, to the effect that the bone had united and that she was walking without the aid of crutches. I immediately wrote to her father and in time received an answer from the young lady herself, giving the history of her case from the time I applied the bandage. For more than a year the dressing, which gave her great comfort, had not been disturbed, and she had followed my directions as to bearing what weight she could upon the limb. At the end of this time the bandage was cut open and sprung apart far enough to permit the limb to be examined. There was still a measure of mobility at the point of fracture, although very much less than when I had applied the dressing. The bandage was tightened again by rollers, and after that the limb was examined from time to time. In July, 1884, the motion at the fracture was hardly perceptible, and a month later the union seemed to be complete. This was between twenty-five and twenty-six months from the date the fracture was first sustained.

Since the above was written, the physician who treated the young lady immediately after the accident and who had her under observation after I applied the bandage, has informed me that her account is essentially correct: that the union of the bone is firm; that the limb is an inch and a quarter shortened, but that she is able to walk with ease and comfort.

The occasional instances of delayed union in the long bones, commonly limited to a few weeks beyond the usual period of consolidation, are almost always due to constitutional debility rather than to local causes—excluding cases of unnecessary meddling with the fracture. Almost always there is a constitutional taint. But in this case of extraordinary delay—extending far beyond any that has ever come under my observation—there was no evidence in the appearance of the subject of malnutrition. On the contrary, during the entire period she was apparently in perfect health. Her father was healthy, but her mother had suffered from epilepsy for more than twenty years. While, without doubt, the want of fixation of the fragments of the bone in apposition had something to do with the extraordinary delay, the fact of the delayed union in the fracture sustained when she was a child, and the delay in the second fracture even after the final bandage was applied, together with the atrophy of the muscles, indicate a local cause as an important factor. It is evident that there was a lack of proper nourishment in the lower portion of the femur and the tissues in that region, even while the general nutrition was excellent.

The case shows the possibility of union being delayed in fractures of the femur, even in youthful subjects, not only for months but years, and of finally uniting without surgical interference.

A SUPERIOR WISDOM TOOTH DISCHARGED FROM THE NASAL PASSAGES; WITH REMARKS.[1]

BY JOHN S. MARSHALL, M.D.,
OF CHICAGO, ILL.

I am indebted to Dr. Emma F. Gaston, of Chicago, a member of this Association, for the history of the following very remarkable case, and which I present with a few remarks in explanation of the peculiar symptoms, the probable course taken by the tooth, and which finally resulted in its being discharged from the posterior nares.

"Mrs. B., aged 62, in October, 1884, suffered intensely from what she supposed to be 'a severe cold in the head.' The pain in the right orbital region was at times excruciating, but not more severe than she had often experienced in other portions of the face and right ear, during the previous ten years. Attacks of facial neuralgia and otalgia had been so frequent during these years, that she had become quite disheartened and had no expectation of ever being freed from them.

"Medical aid had only temporarily alleviated her suffering, and she had become 'tired of consulting physicians' about 'neuralgia.' In this attack the usual domestic remedies for a cold, and an anodyne application for neuralgia had been resorted to without alleviation of symptoms. The right nostril became slightly swollen and completely obstructed. Breathing was almost impossible when the lips were closed.

"After a few days of discomfort, the patient made an unusually great effort to relieve the nostrils, by alternately coughing, and blowing the nose. Suddenly she felt something fall upon her tongue. Spitting the mass into the wash-bowl, she heard a clicking sound, which caused her to examine it. Imagine her surprise at finding a large right superior wisdom tooth covered with fetid pus. The relief of the facial pain was immediate, 'the cold in the head' was explained, and probably much of the 'torture' she had endured periodically for years, was also accounted for.

"This very unexpected experience led the patient to recall an incident which occurred about twenty-six years before. In the year 1854, thirty years previous to the expulsion of this 'eccentric tooth,' she had all her upper teeth removed. Wore a 'temporary set' of artificial teeth for several months, then had a 'permanent set,' on gold plate, which she wore with great comfort, for four years. Then a tumefaction appeared upon the right superior maxilla, near the tuberosity; and she jested about 'cutting a wisdom tooth.' Consulted her dentist about the 'plate.' He found that in perfect condition, and assured her there was no prospect about a tooth, and was unable to assign any satisfactory cause for the suffering.

---

[1] Read in the Section on Dental and Oral Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

"After a few days the annoying swelling and tenderness disappeared, and from that time until 1884, no thought was ever given to those unexplained symptoms.

"In May, 1884, the patient suffered from an abscess in the right ear. After the abscess ruptured an unusual amount of hæmorrhage from the ear occurred. The patient became very much weakened by it, and a physician remained at her bedside for hours.

"Previous to this date she had gradually lost the power of hearing on that side, and was afterwards totally deaf in that ear. There had also been a slight fetid discharge from the nasal passages for several years, but which was supposed to be the result of a simple catarrhal affection."

Remarks: It would seem from the foregoing history that all the pain and discomfort in the right facial region endured by this lady for so many years, was the result of this erratic tooth, and the explanation I would offer is as follows:

The swelling and tumefaction mentioned as having appeared at the posterior portion of the right superior maxilla about five years after the extraction of the superior teeth, viz., twenty-five years ago, was undoubtedly caused by the eruption of this tooth, (and it must have been formed in an inverted position) which, taking a direction upwards and forwards, finally pierced the floor of the antrum of Highmore. The disappearance of the tumefaction, and all unpleasant symptoms speedily passing away, would I think, be a fair inference that this was what occurred. The tooth must, however, have remained in this position for several years, as I think the condition of the tooth would strongly indicate, for you will notice the crown is covered with a thick dark-brown deposit which is very rough upon its surface, while upon its roots there is considerably less, and they have the appearance of being exposed to the effects of the antral secretions for a much shorter period of time. The aural abscess, and this tooth, I think have a very close relationship as regards cause and effect; and I am of the opinion that the abscess in the ear was the result of an abscess at the roots of this tooth, and which discharged its contents into the meatus, and at the same time freed the tooth from its crypt in the maxillary bone and left it loose in the antrum.

The tooth being loose finally found its way to the anterior portion of this cavity and lodged there, and by contact with its nasal wall produced ulceration of this and the inferior turbinated bone. and thus found its way into the nasal passages and into the mouth.

The slight catarrhal (?) discharge which had been persistent for so many years was without doubt the result of the presence of the tooth in the antrum. The record of the case is valuable from the fact that it explains an obstinate case of persistent neuralgia of the trifacial nerve, and indicates the probable cause of a severe aural abscess. The symptoms of the case were, however, so obscure and indefinite in their character as to give no indications of their real cause, and the presence of a tooth or other foreign body in the antrum was not even suspected.

242 Wabash Avenue.

MEDICAL PROGRESS.

Arsenical Treatment of Malignant Tumors.—Dr. F. Koebel, of Tubingen, reviews the results obtained at the Tubingen Clinic (Prof. Bruns) in the treatment of certain malignant neoplasms by means of internal administration of arsenic.

As regards epithelial carcinomata various experiments were made at one time or another in inoperable cases of mammary disease, with local injections of arsenic; but in no cases were favorable results recorded.

Sarcomata, excepting those of the lymphatic glands, have likewise generally been regarded as incurable by means of arsenic. But the author gives a case of a man 39 years of age who presented multiple sarcomata in rapid growth when admitted to the hospital, and who was completely cured after three and one-half years' time by combined local and internal administration of arsenic. The diagnosis was assured by microscopical examination of an exsected portion.

Lympho-sarcomata were not influenced in their course by arsenical treatment, as was proved by the observation of several cases.

The greater part of the paper is devoted to the consideration of malignant lymphomata, in the treatment of which arsenic has always played a conspicuous part.

In order to draw more correct inferences the author first reviews fifty-two cases collected from various sources, and then adds to this number seven cases of Prof. Bruns. He then proceeds to draw his conclusions. The ages of the patients varied equally between 7 months and 72 years. Males were twice as frequently affected as females. In twenty-seven cases the neck alone was affected, in thirteen cases the whole body. Statements as to the presence of leucæmia are incomplete. The treatment consisted in internal exhibition of Fowler's solution, increasing to a maximum of 40 to 45 drops daily, and in parenchymatous injections, gradually ascending to 0.4 or 0.5 ctm. daily.

As to the results attained complete cure was observed in seventeen out of the fifty-nine cases; but in five of these, recurrences are recorded; in the others no further notes are made. The time elapsing before the cure was complete varied from one to six months. Recurrences varied in the time of their appearance from two to eight months.

In fourteen cases the recovery was partial. In twenty-eight cases out of the 59, the treatment was altogether ineffectual. In some cases, however, the time allowed for observation was too short.

The author concludes that the treatment should be continued for at least two months in order to ascertain whether it will prove of avail or not, and recommends the trial of medicamental treatment with arsenic in all inoperable cases of malignant lymphoma, and in certain ones of general sarcomatosis. Although many cases are not cured, some brilliant results have been obtained by this method.—*Beitr. z. klin. Chir. Mitth. aus d. Chir. Klin. zu Tüb.* II. Bd. 1. Hft. 4.—*Annals of Surgery*, September, 1886.

FATAL RESULT OF PEROXIDE OF HYDROGEN INJECTIONS.—A Norwegian surgeon, DR. LAACHE, has reported a case in which a fatal result followed an injection of peroxide of hydrogen into the pleural cavity. The patient was a man 28 years of age, who had had a portion of the ninth and tenth ribs resected. for empyema. The operation had been successful and the wound progressed favorably, and two months after the operation there remained only a fistula about an inch and a half long. In order to hasten the healing of this, hypodermic injections of a 3 per cent. solution of peroxide of hydrogen were resorted to, as this method of treatment had given very satisfactory results in two somewhat similar cases in which it had been tried. Six injections, each containing 0.8 cubic centimetre of the solution, were administered without any particular effect. At the seventh however, the patient complained of pain and faintness, the pulse failed, the respiration became oppressed, clonic contractions occurred in the right arm, the head turned to the left, the jaws became tightly set, the face became cyanotic, and the patient died in ten minutes. The necropsy, which was not made till forty-eight hours after death, revealed nothing very striking. The heart was dilated, and contained liquid blood without air bubbles; some ecchymoses were found in the parts of the left lung, which were adherent to the chest walls. In the fourth ventricle of the brain an ecchymosis the size of a pin's head was seen. A number of air bubbles were present in the blood of the hepatic veins, and some were seen on cutting into the spleen and kidneys. The cause of death was therefore by no means clear. Dr. Laache suggests that it may have been the small extravasation in the fourth ventricle or shock. Dr. Wulfsberg, who took part in the discussion on the case at the Christiania Medical Society, thought it was probably due to the introduction of the drug into the circulation. He thought that the strength of the blood current might have carried the peroxide, if introduced into a vein, through the right heart and lungs almost unchanged, but that afterwards more oxygen might have been disengaged than the blood could absorb, and bubbles were thus produced, which may have been the immediate cause of death. Where animals have been subjected to injections of air into the veins bubbles are not always found in the blood. In these cases Dr. Wulfsberg thinks that death has been due to paralysis of the heart, for when examinations have been made immediately after death bubbles have been found in the coronary arteries. As so long a time had elapsed before the necropsy in Dr. Laache's case, these might have been absorbed.—*Lancet*, Oct. 9, 1886.

HYPNOTIC PROPERTIES OF BOLDO-GLUCINE.—Dr. René Juranville, of Paris, has published as a graduation thesis an account of some experiments and observations on boldo-glucine, an aromatic substance of the nature of a glucoside, obtained by M. Chapoteaut from the leaves of the pneumus boldos, or boldo fragrans, a plant belonging to the mominiaceæ, which has from time immemorial been employed by the natives of Bolivia, Chili and Peru in hepatic diseases. The boldo-glucine used by M. Juranville is not the same substance as boldine, which is an alkaloid existing in very small quantity in the leaves, and which was isolated in 1874 by MM. Cl. Verne and Bourgoin. The observations were directed to the hypnotic action of the glucoside, and were conducted on both animals and human subjects. Dogs were sent to sleep by intravenous injections of boldo-glucine, in quantities of from two to seven grammes. Observations were taken and curves constructed, showing that during the sleep produced the cardiac beats increased in rapidity, while the amplitude of the pulsations diminished; the arterial pressure was not affected. M. Juranville also gathered from his observations that anæmia of the brain was produced. His therapeutic researches were conducted on insane patients, the doses given being from 22.5 grains to 2 drachms, the substance being enclosed in gelatine capsules or introduced by means of enemata. It was not found easy to administer it in the form of draughts on account of their powerful odor. It gave rise to no disagreeable symptoms, and, indeed, appeared to stimulate the appetite and the digestive functions. The hypnotic effect was very definite, ten patients on whom it was tried being all sent to sleep, and in some cases their hallucinations being removed; the effect was not, however, permanent, the sleeplessness and hallucinations returning on the cessation of the treatment. M. Juranville concludes that though boldo is not a perfect hypnotic, it is likely to prove valuable in cases of neurotic or maniacal insomnia when other drugs have been tried without effect. Further study of its action is, of course, required before any very decided opinion as to its efficacy can be expressed.—*The Lancet*, October 16, 1886.

ANTISEPTIC PAPER DRESSING.—DR. DON ANTONIO MORALES PEREZ describes in the *Revista Médica*, of Seville, a simplified antiseptic or Listerian dressing consisting of bibulous paper heated to 110° C. and soaked in a solution of carbolic acid, boracic acid, or corrosive sublimate. This is placed over the wound in about eight layers, and covered with sheet gutta-percha or mackintosh, the whole being secured by an india-rubber bandage. The writer claims for this dressing the advantages of cheapness and portability, and thinks it will be found very serviceable in the field and in small hospitals.—*Lancet*, Aug. 21, 1886.

TREATMENT OF TYPHOID FEVER.—DR. F. PEYRE PORCHER, of Charleston, gives the following formula for a "fever mixture:"

Spirit of nitrous ether	½ oz.
Potassium acetate	1 or 2 drachms.
Potassium chlorate	1 drachm.
Solution of ammonium acetate	1 oz.
Tincture of aconite	½ drachm.
Camphorated tincture of opium	2 or 3 drachms.
Water	to 4 oz.

A dessertspoonful to be taken every two or three hours as long as there is fever. Potassium bromide or morphine may be added if there is great restlessness or want of sleep.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, NOVEMBER, 6, 1886.

THE ABUSE OF INTRA-UTERINE MEDICATION.

Such is the title of an interesting paper read at a recent meeting of the Alumni Association of the Woman's Hospital, of New York, by DR. BACHE MCE. EMMET. The subject which he discussed in the paper was that of uterine discharges, their nature, significance, and the indications for treatment furnished by them. He thinks that it is the general practice among the profession at large to mistake a symptom for a disease, and to treat it as such, in dealing with uterine discharges. Leucorrhœa, for example, is too often looked upon as a nosological entity, and actually as an individuality by the non-specialist; and he too often treats it as an ailment having one cause, its own special pathology, and a definite and positive course to be invariably run. There are very many practitioners who, when informed that a patient has leucorrhœa, recommend a wash or injection of some astringent, trusting that in some way it may hit the mark aimed at. The specialist, on the other hand, may think that "whites are whites," and that they must be attacked as such; and though he usually examines the discharge he sometimes wastes his time in speculating on the manifestation, without seeking the true cause and attacking it.

In dealing with uterine discharges the first thing to do is to make a proper classification; and Dr. Emmet gives the following: 1. Aqueous, serous, and mucous, forming in their combinations, milky, gummy, and ichorous. 2. Purulent. 3. Muco-purulent. 4. Sanguineo-purulent. 5. Bloody. 6. Bloody with mucus. "Aqueous discharge, which may be slight or abundant, at intervals or constant, bland or acrid; what does it import? With it, especially if it has persisted for some time, we shall find the os uteri slightly open, the lips possibly a trifle everted and somewhat eroded, the cervical substance, in all likelihood, to some degree softened, the crown flattened from pressure upon the floor of the pelvis, the woman complaining of weight about the back, hips, and perineum, with a sense of heat either forward toward the bladder or low down in the back; even a desire to micturate often, together with, at the first, a tendency to constipation, later on the bowels being too free. The patient may give the history of having had some febrile movement, but it was slight, did not make much impression; at any rate, there is nothing of it present now; we have but local symptoms to deal with. An accurate observer will not content himself with having noted this much. He cannot, from seeing such a discharge, establish a positive diagnosis. It would be worse than indifferent reasoning for him to hold that, because there is a flux from the uterine mucous membrane, therefore it is diseased, and worse than indifferent practice for him to attack this lining membrane as the offending organ and blind himself to outlying conditions. Will he now explore the pelvis, he will find something positive to guide him, or he may find merely enough to corroborate or to overthrow a mental diagnosis made. Either he will find the pelvis engorged and tumid, the parts lying about the uterus œdematous and soft, the uterus only slightly enlarged, indicating a condition of *recent acute cellulitis*, or he will recognize that the uterus is enlarged beyond what the patient's history can in any way account for, be she multipara even, with subinvolution and all the attendants on multiple labors, and his mind will of necessity revert to commencing malignant disease of the body; or, again, the pelvic cellular tissue will be intact, the uterus normal, and he will discover an enlargement off to one side, presumably a dilated Fallopian tube which, somewhat constantly or at intervals, discharges its quantum of watery fluid; yet, even failing to find such an enlargement, the physician must bear in mind that it may have been; also that another possible source is from ruptured ovarian cysts and cysts of the broad ligaments, or from ascites."

The serous discharge must be considered with the aqueous, as it can only be differentiated from it by the various tests brought to bear on, and it will then connect itself with one of the special conditions referred to, especially ascites. "And with any of these conditions," says Dr. Emmet, "what will it avail the patient to have the mucous membrane of the uterine

cavity cleaned off, and then smeared over with a more or less noxious topical application, the whole to be preceded, no doubt, by the passage over it of a steel instrument called a 'sound?' Fortunately for her, in this case, the pathological conditions are mostly inert; but take it with the first instance, where we have the first stage of an acute cellulitis passed, and are now witnessing the transuding of watery fluid from an œdematous uterine tissue, but with the acuteness sufficiently near at hand to be readily awakened and lighted up into a sharp attack, with possibly fatal consequences; for is not the mere passage of a probe a violence done to such a uterus? is not, all the more, an astringent application, for such would surely be chosen in the given case, an offense to a suffering neighborhood? And think of the possibilities were a solution of iodine, however weak, carried to the fundus of such a uterus, the capillaries large, the lymphatics active, the Fallopian tubes erect, with congestion ready to assume violent inflammation on the slightest provocation. And such, unfortunately, is too often the result of like ill-judged treatment. What was in a process of resolution you have arrested on the threshold, and have dammed up fluids which were the expression of the first inflammatory action. Your treatment has intensified the pathological process; you have been the cause of an effusion of lymph which has now set, and the woman feels better. Of course she does, because the parts which would otherwise be tender by motion are now immovable, and everything is one block, so to speak. There is a time to come, however, and that is in the undoing of all this exudation, when the woman is to suffer far more than she could have anticipated, and there is no limit to the pathological developments which your misguided action may have set up."

The mucous discharges are more frequent than any other; and the mucus may be of greater or less amount, thin or thick, viscid or tenacious, each of which qualities and conditions should be carefully noted. "It is such a common thing for the physician, on meeting with such a flux, to at once say, 'Oh, yes, some endometritis,' and to first remove the mucus, either gently with a cotton pledget held in his forceps or twisted on a stick, or if gummy and adherent, by a syringe or piece of hard, dry sponge, and then to run his applicator, charged with medicament, up, no matter how far, into the uterine cavity. Is such a course rational? Can we say that there is endometritis, and if so, is it justifiable to attack a part of the mucous membrane, as that of the body, when in fact it may be absolutely intact and require no interference whatsoever? To establish in such a case that there is endometritis, we should rather feel positive that we have a decided cause for it and that there is nothing outside which is at the bottom of the ailment, this being merely the symptom." Where shall we look for an explanation of this mucus? May we not look upon it as an effort of the vessels to disgorge, and not as a pathological process? And if this be so should not the discharge be watery or at least a thin mucus? "Yes, if we always saw the case in its early stage. Later, and as the cause is maintained, the lymphatics, capillaries, and uterine glands, being constantly called upon to discharge fluid, finally are more and more enlarged; the glands become hypertrophied, and then the material becomes more and more thickened, even to the point of being held in the mouths of the glands, constituting the gummy, tenacious mucus with which we have all had our struggles. By this time the glands may be said to be diseased, and a probe passed over them will even produce bleeding; but they are still diseased as a symptom, and will resume their natural functions once the disturbing cause is removed. They are diseased, and we have endometritis or endotrachelitis, and it may also call for treatment, but it is to be borne in mind that it is only as a secondary effect; otherwise the main factor will be overlooked, and the condition will prove intractable or yield only as time has removed the original cause; or, perhaps, as the treatment for the one may by chance have hit at the other, or again, as in our effort to cure the endometritis by heroic means we may have destroyed the very surface on which the disease has rested, even though, by so doing, we have introduced a still more dreaded element of trouble. Now, if we look further, and at the conditions which manifest themselves by this mucus, we have a scope embracing almost every one of the pathological conditions pertaining to the uterus and its appendages. Perhaps the very commonest of pelvic troubles is some slight amount of subacute inflammation about the cellular tissues in the neighborhood of the uterus or upon the peritoneal folds forming its ligaments. These two conditions, if present in however small a measure, produce a certain degree of prolapsus of the uterus; by the fulness of the cellular tissue or the thickening of the uterine ligaments, the one and the other is shortened or contracts, and, by so doing, they bring down the uterus to a different plane from that which it occupies in the normal state. This in itself doubles capillaries and veins upon themselves, stretching others, and congestion is the result. As has been seen before, the congestion, which is passive, seeks its own remedy by an exosmosis, and we have the

result in the direction of the freest outlet—viz., the uterine canal, in the form of leucorrhœa. Now, again, if this slight displacement is not recognized—and, being so slight, we may readily understand how it may escape detection—and the ordinary treatment, in this case also, is resorted to; see how absolutely futile it is, how positively harmful. How shall an intra-uterine application of an astringent arrest this flux except temporarily? How is it to be productive of any good effect on the cause of the discharge? And we readily see how, as an irritant, it may be productive of increased harm, unless, indeed, the mucus itself protects the lining membrane from the medicament."

However common the mucous discharges may be, the purulent or muco-purulent are seen often enough, and perhaps most frequently in conditions of impaired constitution, anæmia, subinvolution, prolapsus, etc., not to mention the discharge most commonly seen in old cases of injured cervices. Every practitioner must have seen a number of these cases. Should we treat the parts because of the pyogenic condition? "Most assuredly we may; it is a local lesion, and may be largely overcome while still we are busying ourselves about the more general state which has such a positive bearing upon it. It is precisely because of these cases being so common, and their treatment being so self-evident, that we are in danger of error by overlooking other conditions which are simulated by it or which it masks—for instance, a venereal ulcer situated high up in the uterine canal. The discharge will be the same, but how much benefit will attend the true disease if we are directing our attention to the supposed surgical lesion of the uterine canal? And the very application which would prove serviceable in the one case—viz., nitrate of silver or acid nitrate of mercury—we would strenuously shun in the other. How necessary it is, then to do nothing by routine! Every day we hear at the clinics 'Oh, yes, endometritis,' and in goes the swab or applicator charged with iodine, Churchill's tincture, without so much as thought being directed to the patient, much less a further examination to determine beyond peradventure that the diagnosis is a correct one. Again, with an old laceration and subinvolution, the uterine canal containing pus, the same treatment pursued as indicated above; no improvement; recurrent attacks of pain and febrile symptoms, when a more perfect examination leads us to an old pelvic abscess or a chronic oöphoritis which is discharging its contents by the Fallopian tube, and so through the uterine canal. These cases have been known, and it is not too much warning to throw out to practitioners who will do a little gynæcology to tell them to be on the lookout and make an accurate diagnosis."

In a certain variety of affections the muco-sanguineous and sanguineo-purulent discharges are common enough, and it is of great importance to ascertain definitely the precise origin of such discharges. "If we have pure blood flowing, it is needless to tell a physician not to dwell upon a condition of the uterine mucous membrane and content himself with making applications to it. Each and every one will have sought the cause: a displacement, a fibroid, granulations or fungous growths along the line of the canal, obstructed portal circulation through pressure or mitral regurgitation, breaking down of a vessel from ulcerative process, etc. Yet it is right to enjoin upon all to recognize that some such cause lies behind and is at play in every case, though the blood be not in sufficient quantity always of itself to call for the exhaustive examination. At a time when the uterine probe was in more general use—unfortunately, it is still too much handled to-day—it was the commonest thing to see an exploration followed by a drop of blood or two. What did it mean? No one inquired, and only one in many would inquire to-day. But the solution of iodine is passed in just the same, it may be to do good, but much more likely is it fruitless. The mere fact of using an astringent does argue that we consider the mucous membrane congested, but why should we, even in so small a measure, seek to reduce this congestion, which is nothing *per se*, but is the expression of something much more significant? It is true the cause is at times located in the mucous membrane itself—fungous growths, for instance—but many more times does it depend upon a general engorgement of the pelvic vessels, and thus of the uterus also, in which case we are glossing over the surface of vessels, and are as remote from dispelling the true condition as if making use of a medicated inhalation for the relief of a pulmonary congestion."

Pelvic disorders have a uterine discharge as a common symptom, as a rule, more often cervical than corporeal. It must be acknowledged that this condition is too often treated as a disease. Dr. Emmet's paper is one of practical value; and while we may not be able to endorse all that he says, we must look upon his remarks as a timely warning, which it would be well if both specialists and general practitioners would weigh them carefully. Misdirected intra-uterine applications are positively harmful. Why dilate the cervix to make applications when it is apparent that if any disease of the canal exist the cervix will be patulous, and the canal free?

THE WATER SUPPLY OF CHICAGO.

At a meeting of the Illinois State Board of Health, on October 29, DR. JOHN H. RAUCH submitted a report of the water supply and sewage disposal of Chicago, covering twelve months' systematic observation of the varying conditions affecting the water supply of the City, with a chemical analysis every week, and other interesting data concerning the City of Chicago, as well as Hyde Park, Lake View and Evanston. The analyses were made by Prof. John H. Long, and are therefore entitled to confidence.

The report shows that the sewage of the City can be prevented from contaminating the water supply, and that when this is done the City has the best water supply of any large city on the continent, if not in the world.

During June, July and August, careful and complete experiments were made to determine the rate of purification of the water in the canal and Illinois River in its passage after leaving the pumps at Bridgeport. Over one-half of the sewage-pollution disappears before reaching Lockport, twenty-nine miles below Bridgeport, and one-third of the remainder is lost in the next four miles by the mechanical agitation of the water by falls, wheels, locks, etc. At Joliet the pollution is diminished by nearly three-fourths, and is reduced in a proportionate ratio until it disappears altogether. As there was hardly any dilution of the canal during these months the loss of sewage between Bridgeport and Joliet is attributed to oxidization. At Channahon, ten or twelve miles below Joliet, the sewage disappears altogether. A comparison of the analyses of the waters collected at Ottawa and Peoria shows that causes entirely apart from Chicago sewage-pollution affect their purity. Although the free-ammonia determination is always in excess at Ottawa as compared with Peoria, the oxygen consumed figures during the period were greater at Peoria on two occasions, and the mean excess of these figures at Ottawa bears no relation to the excess of the free ammonia determinations. With 50,000 cubic feet of water passing into the head of the canal per minute the [Chicago] main river and the South Branch will be purified; no nuisance will result from sewage at Joliet and below, and the potability of the water in the Illinois River at Peoria will not be in the least affected from that source. An increase of water to 60,000 cubic feet per minute would take in addition the sewage of the North Branch after it has once been cleaned out, and would diminish the nuisance in the South Fork of the South Branch at least three-fourths.

In summer, when oxidation proceeds most rapidly, the minimum quantity would have sufficed; but in winter, when oxidation is retarded by ice formation shutting out the light and air, by the low temperature, and by the impeded motion, it is probable that the maximum dilution would be necessary. Since the time when this estimate was made there has been a decrease of the wastes from certain industries, notably from the slaughter and packing houses. This diminution is likely to continue as these wastes are more fully utilized; so that it is probably safe to assume that the maximum concentration of the sewage effluent of the Chicago River has been reached, and that in the future a lesser rather than a greater percentage of dilution will suffice than the above figures would require.

The problem of preserving the water supply of Chicago and its suburbs from pollution and the inoffensive disposal of their sewage and wastes of all kinds requires that all sewage and wastes be diverted from the lake into the river and its branches; and that there be pumped from the river into the canal, or other waterway, an average of 12,000 to 13,000 cubic feet per minute for every 100,000 inhabitants. The diversion of sewage and wastes into the river will preserve the purity of the lake water even when taken at the present distance from the shore. This continuous pumping of 12,000 cubic feet per minute for every 100 000 inhabitants will effect a prompt removal of sewage from the river and its branches, so largely diluted, that, with the accelerated rate of oxidation caused by the mechanical agitation, it will be rapidly rendered inoffensive in the canal and will under no circumstances affect the potability of the Illinois River water. If the removal from the South Branch be effected by gravity a larger volume must be provided for for obvious reasons.

These are the two conditions of the solution of the problem. All else is a matter of engineering detail, embracing the change of fall of sewers (whether within or beyond the present city of Chicago) now discharging into the lake, or their abandonment and the construction of new ones discharging into pump-wells in low areas, the sewage to be thence pumped into the river; the exclusion or reduction of storm-water and overflow in the river from the Desplaines watershed and from the watershed of the North Branch; the utilization of the canal, or of the bed of the Desplaines, or of both, and other details.

Chief-Engineer Hering, of the Drainage and Water-Supply Commission, returned on October 29 from a tour down the Desplaines River. He reports the sewage was noticeable as far as Joliet, but that a chemical analysis has determined its existence as far

as La Salle. The proposition now being followed by the Commission is to carry the sewage of the city off by way of the Illinois and the Desplaines Rivers. All difficulty heretofore experienced by the overflow of the Mud Lake region during the spring freshets in the Desplaines will be obviated by constructing a canal from the river to Lake Michigan at or about Norwood Park. Mr. Hering is more disposed toward the river plan. It is claimed that oxidation of the sewage can be increased to such an extent that the impurities of the river will not be offensively apparent for any great distance. Mr. Hering will also make a general observation of the fluctuations of the lake, and to obtain correct data as to the operation of the currents there, simultaneous observations will be made wherever the atmospheric influences warrant it—at Chicago, Milwaukee, St. Joe, Grand Haven, Michigan City, and other available points. These observations are valuable in view of the proposition to move the crib further out into the lake. If it can be shown that the crib can be so located as to be beyond the reach of turbid water, and to insure cooler water during the summer, it will be of great benefit.

NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

As the summer has passed, and the season favorable for literary and scientific work has fairly begun, we desire again to call the attention of the profession generally, and of members of the Association especially, to the necessity of commencing, without further delay, the work of preparing papers and reports for reading and questions for discussion, in the several Sections. The scientific and practical value of the annual meeting will depend almost wholly on the degree of research and faithfulness exemplified by members in completing in good time such contributions as they intend to make. To merely think about it and yet delay actually commencing the work until a few weeks or days before the time of meeting, is pretty sure to result either in doing nothing, or in putting together some ill-considered propositions to be read as a "brief abstract," with the expectation of taking time to write it out for publication afterwards. The eight Sections of the American Medical Association fairly include the entire field of medicine with all its specialties, and in the membership of the Association are included as elegant writers, active investigators, and skilful practitioners, as exist in any of the special separate organizations of this or other countries. And to the ambitious workers the annual meetings of the Association not only afford more general audiences for each Section, but the papers obtain, through the columns of THE JOURNAL, a much wider circulation in all parts of the country, than they could get through any other channel. Less than seven months intervene before the next meeting, which is to commence on the first Tuesday in June, in Chicago, where every local preparation will be made for as profitable a meeting as the Association has ever held. Let all who intend to make contributions remember that early notice should be given both to the Chairman of the Committee of Arrangements and to the Chairman or Secretary of the Section for which the contribution is designed. For the convenience of all parties, we again publish the addresses of these officers as follows: Chairman of the Committee of Arrangements, Charles G. Smith, M.D., 125 State St., Chicago; Section of Practice of Medicine and Materia Medica, Chairman, J. S. Lynch, M.D., Baltimore, Md., Secretary, J. B. Marvin, M.D., Louisville, Ky.; Section of Surgery and Anatomy, Chairman, H. H. Mudd, M.D., St. Louis, Mo., Secretary, A. M. Pollack, M.D., Pittsburgh, Pa.; Section of Obstetrics and Diseases of Women, Chairman, F. M. Johnson, M.D., Kansas City, Mo., Secretary, W. W. Jaggard, M.D., Chicago, Ill.; Section of State Medicine, Chairman, G. H. Rohé, M.D., Baltimore, Md., Secretary, Walter Wyman, M.D., U. S. Marine Hospital Service; Section of Ophthalmology, Otology and Laryngology, Chairman, X. C. Scott, M.D., Cleveland, O., Secretary, J. H. Thompson, M.D., Kansas City, Mo.; Section of Diseases of Children, Chairman, DeLaskie Miller, M.D., Chicago, Ill., Secretary, W. B. Lawrence, M.D., Batesville, Ark.; Section of Oral and Dental Surgery, Chairman, J. S. Marshall, M.D., Chicago, Ill., Secretary, E. S. Talbot, M.D., Chicago, Ill.; Section of Medical Jurisprudence, Chairman, I. N. Quimby, M.D., Jersey City, N. J., Secretary, H. H. Kimball, M.D., Minneapolis, Minn.

PRIVILEGED COMMUNICATIONS.

In the case of "People *vs.* Murphy," Court of Appeals, N. Y., Crim. L. Mag., April, 1886, it was ruled that when a physician is sent to a prisoner after a crime has been committed, and she accepts his services professionally, disclosures made by her to him are privileged communications, and this rule applies to all actions, civil or criminal. The opinion of such physician as to whether an abortion has been committed, founded partly on such statements, is also inadmissible. Although the prisoner was a party to the crime (abortion), and relatively to it was an accom-

plice of the accused, and, so to speak, a co-conspirator with him, yet her declarations, narrative of a past occurrence, and constituting no part of the *res gestæ*, were not admissible.

SOCIETY PROCEEDINGS.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, October 7, 1886.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

(*Concluded from page 500.*)

DR. B. F. BAER presented the specimen and related the following history of

A CASE OF FIBRO-SARCOMATOUS TUMOR OF THE OVARY.

Mrs. ——, aged 36 years; married; two children, youngest 15 years of age. About July, 1885, she first noticed that the lower portion of her abdomen was increasing in size, especially in the left iliac region, and she was troubled greatly with flatulent dyspepsia. She had suffered for many months before with pain in the left iliac region, and on November 29 she was seized with what she characterized as terrible pains in that region. She was compelled to take to her bed, and her physician said she had pelvic peritonitis. She remained in bed three weeks, when she became able to be up, still suffering considerable pain, however, with diarrhœa and an occasional discharge of blood from the rectum. She now noticed a hardness in the lower left iliac reigon. This continued to increase in size, while she grew weaker and began to lose flesh. At this time she passed into the care of another physician, who ordered her back to bed and blistered the surface of the abdomen. She remained in bed four weeks, but the growth failed to diminish in size; on the contrary, it continued to increase. On February 10 she was able to get up and began to feel stronger, but suffered from excessive tympany, together with nausea, loss of appetite, and great pressure upon the rectum and bladder. She also suffered from severe dyspnœa.

On March 30 she was suddenly seized with cramp-like pains in the region of the tumor. These continued for a few days, with almost entire absence of sleep and with continuous nausea. The pain gradually subsided, but she was losing flesh and strength. She had another attack of pain, with such dyspnœa as to leave her recovery a matter of doubt. Ten days later she first consulted me. On examination, I found the abdomen greatly distended and tympanitic, except in the left hypogastric region, which was dull on percussion. Palpation revealed an irregular lobulated mass, apparently having pelvic connections. The uterus occupied the right anterior portion of the pelvis, crowded over by the mass in the left pelvic region. This mass was hard and firm and nodulated, extended into the hypogastric region, and was apparently closely connected with the uterus, as well as with the other organs of the pelvis.

The previous history of the case, together with the physical signs present, led me to suspect the presence of pus, possibly suppuration in a thick-walled ovarian cyst. The uterus measured two and a half inches in depth. Its connection with the tumor did not seem more than ligamentous, and the apparent rapid development weighed against fibroid tumor of that organ.

The indications were plain. The patient entered my private hospital April 9, ether was administered, and an exploratory incision was made. This revealed a nodulated mass having the color and appearance of a thick-walled ovarian cyst; but it seemed to be solid throughout, and was firmly fixed in the pelvis. Its size could not be reduced, and the incision was increased to six inches, the tumor separated from its adhesions and lifted from its nest. I was much gratified to find that it had a very small pedicle, which was tied and the tumor was removed.

The patient bore the operation badly, and it was thought that she would succumb on the table; it was hours before the pulse could be felt at the wrist, but she rallied, and the next morning she seemed to be doing quite well. A free discharge of bloody serum had taken place through the drainage-tube. After alternate sinkings and rallyings, she died on the evening of the second day from shock, from which she had not entirely recovered since the operation. There was not the slightest evidence of inflammatory action. The discharge from the drainage-tube had ceased and the wound was healing nicely.

This case is interesting on account of the character of the tumor. "A true fibrous tumor of the ovary is a thing of very rare occurrence," says Wells, and he goes on to say: "It will be found that many cases reported as ovarian fibroids are in reality tumors beginning in the uterus, which overgrow and involve the ovary so as to disguise its natural appearance, or conceal it altogether." Doran says: "I have never found a solid ovarian tumor to be formed of pure fibrous tissue, and strongly suspect that fibroids of the ovary are identical pathologically with fibroids of the uterus. All the solid tumors that I have seen removed at operations have proved to be sarcomatous or cancerous."

Dr. Formad, who kindly examined this specimen for me, sent me the following report: "The solid tumor of the ovary showed, upon microscopic examination, to be a fibroma with decided sarcomatous change — a fibro-sarcoma." A peculiarity of this tumor is its nodular character.

DR. KELLY remarked that true fibroid of the ovary is very rare, and the specimen here presented is not, in his opinion, fibroid, but sarcoma. The only fibroid he has seen was one which he examined last spring. That tumor was about one centimetre in diameter, and, although attached to the ovary, lay in the grasp of an adherent fimbricated extremity which cast some doubt upon the origin of the small growth. The so-called fibroid appears to be in every way analogous to the "fibroids" of the uterus, and a useful diagnostic expedient is the appearance of bundles of "sympathetically" enlarged fibres running from the hilum into the broad ligament.

DR. BAER also presented the specimen and related the history of

A MONOCYST OF THE OVARY.

Mrs. J., aged 29; married four years; sterile. Puberty at 14 years of age, and menses always normal. Seven years ago, she first discovered that the lower portion of the abdomen was increasing in size. This continued very slowly during the next three years, and at the time of her marriage it was large enough to be perceptible to her friends. It ceased growing until six months previous to the date at which she first consulted me, April 14, 1886, when she seemed to be in excellent health; no loss of flesh; no pain; complexion ruddy, and appetite good. Menstrual flow increased and accompanied with uterine tenesmus during the last two months, and she had begun to complain of pressure and over-distension. When the patient was in the dorsal position the abdomen did not flatten out, and it was symmetrical and smooth. Dulness on percussion over the anterior and lateral surfaces of the projecting portions of the abdomen, with resonance in the line of the colon. There was marked fluctuation in the dull region. Vaginal examination showed the uterus anteverted, of normal size, not freely movable, yet not closely adherent to the tumor.

Diagnosis.—Probably cyst of the broad ligament, from the long existence of the tumor, its slow growth, symmetrical development, together with the fact that it had not influenced the patient's health during its growth until it had attained such size as to interfere with respiration. Its removal was advised, and the operation was performed at my private hospital, April 27. An incision three inches in length was made. The tumor was rather darker in appearance than is usual in cysts of the broad ligament. It was now tapped, and a dark grumous fluid drained away. The tumor collapsed, and was easily drawn through the incision, when its pedicle was found to consist of the entire broad ligament and to be very short, holding the base of the tumor deep in the pelvis. I was compelled to enucleate the cyst, leaving a broad open pedicle or surface, which I ligated *en masse*.

An accident now occurred from which the patient almost lost her life from hæmorrhage, viz.: slipping of the pedicle ligature. The mistake was in endeavoring to make a pedicle of the broad ligament, which had been laid widely open by the enucleation of the tumor, and which was not a proper pedicle. The mass was too great to be held by ligature, and was treated by bringing the edges together by interrupted sutures, of which ten were required. The hæmorrhage was checked by grasping the vessels in clamp forceps until the sutures were placed. There were no after-symptoms. The patient is now entirely well.

I call attention to the monocystic character of this tumor, its location in the broad ligament, and to the character of the contained fluid—dark-colored and thick, not clear and limpid, as is usual in cyst of the broad ligament proper.

The report of Dr. Formad is: "The cyst is a monolocular one, developed from the ovary undoubtedly. Its lining is characteristic of ovarian cysts—epithelial, and whatever scrapings from the wall could be obtained showed the ovarian cells of Drysdale. The fluid was dark, grumous and turbid, which excludes cysts of the broad ligament or parovarian, as the latter kind of cysts have always a limpid, clear liquid."

Dr. Baer also presented the specimen and read the history of

A CASE OF BURSTING CYST OF THE OVARY.

Mrs. E. G. was sent to me by her physician, Dr. James Simpson. She was 47 years of age, and had been married twenty-seven years, but had never been pregnant. Puberty at 14 years, menstruation always painful. She stated that twelve years ago she had felt a "lump" in the left iliac region. This was painful, especially during the menstrual period. In the fall of 1885 the lower portion of her abdomen began to enlarge, and within a few months it had so increased in size as to render locomotion and respiration difficult. On January 1, 1886, while riding in a street car she was jolted in crossing a railroad track. She was at once seized with great pain in the abdomen, accompanied with pallor and faintness. She was taken home and placed in bed. A short time afterwards she began to vomit a fetid fluid, which came up in large quantity and at regular intervals, and at the same time she passed fluid of the same character from the bowels. The next day she had, in addition, attacks of profuse perspiration. She also had a slight metrorrhagia, the first evidence of menstrual flow since January, 1884. The abdomen rapidly diminished in size and within a week had regained its normal dimensions. It was three weeks before her strength had returned sufficiently to permit her to go about. She soon noticed that her abdomen was filling up again, and within a month it had become as large as it had been on January 1st. During the first week in March she was again seized with pain of the same character, and followed as before by vomiting, purging, diuresis, and diaphoresis and reduction of the abdominal distension. All of the symptoms were more marked in the second attack. Six weeks afterwards she was as large as ever, and she then came into my care.

She presented an appearance of great pallor and commencing emaciation; the "facies ovariam" becoming plainly perceptible. She was very nervous and excited for fear of a repetition of the phenomena that had occurred before.

On examination in the dorsal position, the abdomen was rather projecting, not flat, and was larger on the right than on the left side. It was smooth throughout, and gave a dull sound on percussion over the whole anterior surface, resonance existing in the line of the colon. There was marked fluctuation throughout the dull portion. Vaginal touch showed the uterus to be situated high, as if it were drawn upward. It was not freely movable, and the external os too small to admit the sound.

Diagnosis.—Ovarian cystic disease. Immediate operation advised.

On July 22 the operation was performed at my private hospital. Incision three inches, in median line; wall of the tumor thin and dark colored. The trocar was passed and the contained fluid, dark in color, drained away. The cyst collapsed and was

easily drawn through the incision. The pedicle was short and broad, consisting of the broad ligament, and requiring enucleation of the tumor before its ligation could be accomplished. It was now found that another tumor existed on the left side. This had a peculiar shape, being elongated and deeply seated in the pelvis, as though it were entirely subperitoneal. The peritoneum extended out from the the uterus, spreading over the tumor and approaching the abdominal wall, as is sometimes seen in a fibroid tumor of the uterus which has pushed that membrane upward in its growth. The cyst extended along the line of the colon, and at first I was not sure that it was not that organ greatly distended by gas. I soon determined that it contained fluid, and that its general appearance, color, etc., were similar to those of that just removed. It was emptied, by means of the trocar, of a fluid similar to that of the first tumor, and the tumor collapsed. I hesitated as to the proper course now, because of the large and broad base of this cyst, and its close adhesion to the descending colon. I first thought of stitching it to the abdominal incision and inserting a drainage-tube into it, and was soon afterwards sorry that I did not follow out my first idea. I began an attempt at enucleation, and this was attended by so much hæmorrhage from the large surface which it was necessary to dissect, that I was compelled to desist. I had separated at least six inches of the descending colon from the cyst when I found that the latter dipped down so deeply into the pelvic excavation that I concluded it would be hazardous to finish the enucleation. I was in a quandary, for I had only two-thirds of the lining membrane of the cyst in my control, and I finally did what I was never compelled to do before, and what I may be criticized for doing in this case. I drew up as much of the cyst as was possible, threw a ligature around the mass, tied it as a bag, and cut away the external portion; thus leaving a large quantity of the lining membrane still within the pelvis. The oozing of blood from the large open surface was checked by ligatures and compressive forceps until all bleeding had ceased. The toilet of the peritoneum was then made, a drainage-tube inserted, and the incision closed. During the next few hours there was a free discharge of bloody serum through the tube, but the next morning it had ceased. On the third day the tube was removed. The patient made an excellent recovery, and went home on the twenty-third day.

The points of interest in the case are: 1. The bursting character of both of the cysts. 2. Their monocystic character and probable ovarian origin. 3. The deep attachment of the one on the left side and its partial removal only.

"Bursting Cysts of the Abdominal Cavity" is the title of a very instructive paper which was read before the Gynæcological Society in 1881 by Dr. Wm. Goodell, and in the paper itself and the discussion which followed it was shown that this character of tumor is not so rare as the experience of a single individual might indicate. In addition to the cases which Dr. Goodell himself reported, three in number, there were no less than ten of the members present who had met with cases of similar character, some of the gentlemen as many as six or seven. Only two or three of the cases reported died as the result of the discharge of the fluid into the abdominal cavity. This appeared to prove that the fluid of an ovarian cyst was not so irritating to the peritoneum as had been supposed. Dr. Goodell took the position that these cysts were of the broad ligament or parovarium, and not true ovarian cysts, and as a consequence the fluid was bland and unirritating, being readily absorbed and discharged through the emunctories. This view is probably correct for the majority of cases, but there are others where the evidence furnished by operation has proved the origin of the bursting cyst to have been in the ovary. The monocystic character of the tumors in this case, and their location beneath the peritoneum, within the folds of the broad ligament, would seem to indicate that they originated in the parovarium and not in the ovary; but the character of the fluid and its rapid secretion are in favor of an ovarian origin. An interesting feature in this case is the fact that the fluid was discharged by vomiting and purging as well as through the bladder and skin, showing that it must have been emptied into the abdominal cavity as well as into the intestinal tract. From the close attachment of the tumor on the left side to the colon, it is probable that this cyst discharged itself into that organ and was thus thrown off by vomiting and purging. While the fact that diuresis and diaphoresis took place at the same time in such quantity, and that the abdominal distension entirely disappeared, would lead to the conclusion that both cysts must have burst simultaneously, the one discharging into the bowel, the other into the peritoneal cavity. This is interesting, if true, and probably unique. At least I have not been able to find a record of a similar case. I examined this patient recently and found only a slight induration on the left side. She has been quite well.

DR. HARRIS mentioned a case of bursting cyst that had been sent to Dr. Atlee for operation after the cyst had burst once and refilled. The day had been fixed for operation, but menstruation coming on a postponement was made, and the cyst again burst and the woman died in collapse. Ovarian tumor had been diagnosticated.

DR. PARRISH mentioned a case of rupture of an ovarian cyst which occurred in the "old woman's ward" at the Philadelphia Hospital. The rupture was spontaneous while the woman was in bed. She died in a few minutes from shock. In another instance in which rupture had not been suspected, one cyst, the contents of which were colloid, had burst, another ovarian cyst was found and removed. There was no evidence of acute inflammatory action.

DR. BAER exhibited a

FIBROID POLYPUS OF THE UTERUS.

The patient had suffered from metrorrhagia for two or three years. Labor-like pains were followed by spontaneous expulsion of the tumor, which was supposed, by three physicians, to be an inverted uterus; it was replaced in vagina and tamponed. Dr. Baer found the uterus in normal position, and removed the tumor by means of the spoon-saw.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Oct. 18, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. R. W. BISHOP read a paper entitled

IS ALOPECIA PREMATURA CONTAGIOUS?

Dr. Bishop thought this disease due to micro-organisms upon the shafts of the hair, and that it is contagious. He has made a series of experiments, assisted by Dr. Oscar Lassar. A typical case was that of a perfectly healthy young man whose head was nearly bald on top. The hair from the diseased surface was brittle and came out easily when pulled. Microscopic examination revealed a large number of fungi on the scalp and the shafts of the hair. the root being free from the parasite. The diseased hairs were cut and mixed with vaseline, which was rubbed on the skin of healthy rabbits, and in two weeks the hair entirely disappeared from the parts which had been rubbed. Experiments were continued, and it was found that the hairs from the inoculated animals possessed increased virulence.

The patient was treated as follows: The head was thoroughly washed for fifteen minutes with tar soap, which was removed with warm water. The head was then exposed to a warm water douche, which was gradually cooled until the water was quite cold; it was then rubbed with a rough towel until dry, and afterwards washed with a solution of corrosive sublimate 1 : 500. This was removed and a ½ per cent. of lithol applied, and, after this, 1½ per cent. carbolic oil was applied very slowly. The treatment was continued daily for eight weeks, and the result was a fine growth of new hair with beginning pigmentation at the end of three months.

DR. JOSEPH ZEISLER thought this was a disease which possibly might be produced by vegetable organisms. He knew of Dr. Bishop's experiments, but still there were strong objections to the value of these experiments. Michelson made some experiments by using a mixture of vaseline and rancid oil and rubbing it on the skin of guinea-pigs, and after these inunctions the animals got bald on the places anointed, although neither sick hairs nor scales were used. There are older experiments which show that animals fed on old cheese or hard boiled egg get bald. Another point was, that the disease is so frequently met with in men and so rarely in women, between whom there are plenty of chances for contagion. It is an ascertained fact that the disease most frequently occurs in men who in their earlier years (17 to 25) suffer from pityriasis of the scalp, so that there certainly is a causal relation between this affection and alopecia. After all, he thinks that the contagiousness of this disease is still an open question.

DR. FRANK BILLINGS made some remarks on

HOSPITAL PRACTICE IN VIENNA, WITH EXHIBITION OF NEW URINE TESTS, NEW INSTRUMENTS, ETC.

The hospital at Vienna contains about 2,500 beds. The number of deaths per year is about 3,000. Prof. Nothnagel, who presides over the first medical clinic, has from 80 to 100 patients in his ward continuously. Histories of the patients are written by assistants and left in charge of the nurses. Temperature charts are kept of important cases, the temperature being taken every two hours. Daily clinical and microscopical examinations are made of the urine in all important and grave cases. Dr. Billings gave an illustrated description of the tests employed. He said that in the Vienna hospitals some form of tuberculosis is found in nearly 70 per cent. of the deaths. The treatment of acute diseases is generally expectant, and in typhoid fever, milk and other liquid diet is used. Previous to 1879, when the city obtained its water from the Danube River, typhoid fever was almost epidemic in Vienna. In that year they put up new water works, and since that time not one case has developed in the city. The obstetrical department is divided into three clinics, with 3,000 confinements in each clinic yearly. Four cases of sublimate poisoning occurred last winter. The autopsies showed ulceration throughout the alimentary tract with charred, black appearance of the mucous membrane throughout the colon and rectum. The solution used in these cases was 1 to 4,000, bichloride of mercury. Abortion is treated by rest in bed with non-interference, unless too severe hæmorrhage occurs, when tampons are used. In the gynecological department Prof. Braun performs laparotomy every Wednesday. Where a part of tumor is left in the stump, the prognosis is bad even when treated externally, because of the low vitality of the tumor tissue, which becomes necrotic. In operations about the anterior vaginal wall no anæsthetic is used. In the surgical wards of Profs. Billroth and Albert, closest attention is paid to cleanliness. The operating rooms are constructed with floors inclined to the centre, where a grating allows all blood, water, etc., to flow away. The floor is thoroughly douched every day. Sponges, silk sutures and towels used in operations are boiled in a 5 per cent. solution of carbolic acid for one hour, then placed in a 5 per cent. solution for fourteen days. Cutting instruments are polished and placed in a 2½ per cent. solution of carbolic acid during the operation. Instruments used in operations for abscesses, etc., are heated in flame and sent to the instrument maker to be repolished. A 10 per cent. solution of carbolic acid is used for irrigating wounds during operation. For partial amputation of the tongue a bloodless method is used as follows: First, a double stout suture thread is passed through the centre of the tongue from below upward and backward, beginning at the frænum; the two threads are twisted and tied upon the side firmly enough to control the vessels. The part is then amputated smoothly by taking out a triangular section. Two deep, and a sufficient number of superficial sutures close the wound after the vessels are secured. A bacteriological laboratory is connected with the pathological department, and cultivations of bacteria are made from typhoid fever, pneumonia, erysipelas, glanders, septicæmia and other diseases. Experiments with bacterial cultures are made upon lower animals. Nearly every department of the hospital now has a bacterial laboratory, and the search for new forms and confirmation of already discovered bacteria goes on with enthusiasm.

DR. C. W. PURDY said that in testing the urine for evidence of kidney diseases, the only proteids of any significance were serum albumin and globulin. The presence in the urine of peptone, hemialbumose, etc., points to morbid conditions outside of the kidneys, and whatever light they may shed upon general conditions, they afford us no information whatever as to the state of the kidneys. He mentioned this because so much had been written of late on peptonuria, and the various transition proteids, that an impression seemed to have arisen that the presence of these in the urine was of scarcely less importance than that of serum albumin. The only bearing these non-homogeneous proteids have upon the subject is the fact that their occasional presence in the urine may, with certain tests, be mistaken for serum albumin, unless great care be exercised.

He believed the most delicate of all tests for albumin in the urine to be the potassia mercuric iodide with citric acid; but that it had not met with general favor thus far on account of the errors liable to arise through its use. It is necessary to discriminate between the precipitates formed by this test with peptone, alkaloids, above all with mucin, and that formed by serum albumin. It is true that heat clears up the precipitates due to peptones and vegetable alkaloids, but not so with mucin, the latter being practically indistinguishable from albumin. He has lately, however, come upon a method which he believes will correct not only the errors due to the presence of mucin, but also those likely to arise from the presence of alkaloids and peptone when precipitated by this test. The method is very simple, viz.: after having applied the reagent to the suspected urine, if a precipitate be formed, add hydrochloric acid in volume equal to the quantity of urine tested; if mucin, peptone, or vegetable alkaloids be the cause of the turbidity, it promptly clears up; while if due to albumin the precipitate becomes flocculent and settles, but does not dissolve. A considerable number of experiments have shown him that hydrochloric acid in volume equal to one-half the quantity of urine tested quickly clears up the peptone, alkaloid and mucin precipitate, while it requires at least two volumes of hydrochloric acid to dissolve the slighter traces of albumin in urine when precipitated by the mercuric test.

With regard to sugar testing: In addition to the test brought forward by Dr. Billings, two new ones have recently been introduced, both of which are of such exceeding keenness that they are claimed to be able to detect 0.00001 per cent. of sugar. These tests are, alcoholic solutions 15 to 20 per cent. of alpha-naphthol, and thymol. Two drops of either of these solutions are added to two cubic centimetres of urine, and the mixture briskly shaken; sulphuric acid is next added in quantity equal to the volume of urine, and again briskly shaken. In the case of alpha-naphthol a deep violet color is developed in the presence of sugar, and dilution with water throws down a violet blue precipitate, soluble in alcohol with a yellow color, or in caustic potash with a deep yellow. In the case of thymol a dark red color is produced, and, on adding water, a precipitate settles, which dissolves with alcohol, forming a yellow color more decided if ammonia be added.

Dr. Purdy often had samples of urine sent him, which though loaded with albumin, no casts could be found therein. These were samples of urine which had been long passed—perhaps several days before, alkaline fermentation having occurred, and the urine rendered alkaline quickly dissolves the casts. In searching for renal casts it is of the greatest importance to have the urine as freshly passed as possible. His method of examining urine for casts is as follows: First, he prefers to have the urine passed at his office. If the urine be neutral or alkaline in reaction, he renders it frankly acid by the addition of dilute acetic acid. In all cases he adds a solution of resorcin to the urine which prevents change for weeks. The urine thus treated is set aside in a conical glass, carefully covered and allowed to stand for from twenty-four to forty-eight hours; at the end of this time, a few drops—not more than ten—are taken up by a glass tube from the bottom of the glass, and one or two drops placed upon a glass slide and examined under the microscope. He had had no difficulty in finding casts by this method if they were present in the urine even in sparse numbers.

DR. FRANK S. JOHNSON described a new form of *Hæmoglobinometer*, viz.:

THE HÆMOTER OF VON FLEISCHL.

It consists of a stand with a horseshoe base, an upright, a stage, and a well divided perpendicularly in two equal compartments and closed below by thin glass. One-half of the well is to hold blood of known dilution, the other half is for clear water. This well fits an opening in the stage. Beneath the stage is a plane white reflector. On the under side of the stage is a frame that can be racked back and forth. Set in it is a narrow wedge-shaped piece of ruby glass whose width is one-half that of the opening in the stage. The thicker end of the wedge gives by transmitted light the color of a dilution of blood containing the maximum amount of hæmoglobin. The thinner portions correspond with the color of a dilution of blood poorer in hæmoglobin. The percentage of variation from the normal amount of hæmoglobin is estimated by comparing the color of the blood solution with some part of the ruby wedge. Only artificial light can be successfully used for the examination.

With the instrument are several capillary tubes for measuring the amount of blood to be used for comparison with the colored glass standard. The necessary amount of water for making the dilution is measured in one of the chambers of the well.

The blood for examination is best obtained by pricking the ball of an uncompressed finger and forcing out a drop by gentle pressure. The amount needed is taken in the capillary tube. One of the halves of the well having been previously half or two-thirds filled with water, the blood can be easily washed from the measuring tube into it. Then both halves of the well are accurately filled with water so that the upper surfaces are plane. A small pipette is furnished for this purpose. The well is then so

adjusted that the half holding water is above the colored glass, and that holding the blood solution receives its light directly from the white reflector. The next step is to so adjust the ruby wedge that the light it transmits corresponds in color with that passing through the blood solution. The observer then reads off the percentage of the normal amount of hæmoglobin as indicated by a scale graven upon the metal frame carrying the glass wedge. The average percentage of hæmaglobin in the blood of healthy individuals varies greatly with age and sex. The average is from 12 to 13 per cent. The percentage of this amount is ascertained by comparison with the color scale. This result should be corrected as far as possible for the known variation of hæmoglobin in healthy blood. Taking as the normal percentage that found in the blood of healthy individuals between 25 and 30 years of age, it is found that in the first few weeks of life the percentage is greatly in excess; but after six months or a year, it is below the adopted standard, reaching it again at about 25 or 26 years of age, and that after the thirtieth year, the amount is below the normal but is variable.

The instrument recommends itself to the ordinary practitioner. It does not entirely replace the hæmocytometer, but in all cases where it is only necessary to watch from time to time the rise and fall of the hæmoglobin in the blood, it can be done much quicker and more accurately than by the hasty counting of the corpuscles by the microscope.

Dr. J. J. M. Angear thought that it is necessary to count the globules, because we have conditions where the red corpuscles are normal in number but deficient in hæmoglobin, hence the necessity of both instruments.

Dr. C. E. Webster, Chairman of the Pathological Committee, exhibited a spinal column and said that it showed caries resulting in the entire destruction of the bodies of one of the vertebræ, without the protection of the characteristic deformity before the removal of the ligaments, no curvature being noticeable.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, September 9, 1886.

The President, H. O. Marcy, M.D., in the Chair.

H. J. Harriman, M.D., Secretary.

Dr. J. E. Kelly, read a paper entitled

THE ETHICS OF ABORTION, AS A METHOD OF TREATMENT IN LEGITIMATE PRACTICE.

(See page 505.)

Dr. L. F. Warner said that the paper did not admit of criticism, but deserved candid and unqualified approval. He believed that no woman ever used means for procuring the death and expulsion of the fœtus without realizing that it was a moral wrong, and that every woman who did or consented to the act thereby lowered herself morally beyond recall.

Dr. Symington Brown remarked that the paper was an admirably drawn up special plea, which might have done credit to a lawyer. Dr. Kelly had set out by disclaiming all sectarian bias; but the fact was that the whole plea was based on the authority of the Church, and, like many similar arguments, could not hold water. He was aware that this was not the place to discuss such a question, and did not deny that the Church had a right to dictate to its own members; but he emphatically denied its right to dictate to him. He thought that Dr. Warner had failed to grasp the real aim of the paper, which was not directed against *criminal* abortion, but against abortion itself under all possible circumstances. The mere fact that the word "criminal" is prefixed shows that there must be a kind which is justifiable. The physician, after consultation, is the proper party to decide what is best to be done, and the patient has a right to veto his decision. For his part, he only recognized one rule to be governed by, and that is, the welfare of his patient. He would like to ask Dr. K. how his argument would apply in a case of extra-uterine pregnancy? During the early months, a current of electricity suffices to destroy the fœtus without injury to the mother. Is not a child alive outside as much as inside the uterus? Yet no conscientious gynecologist scruples to kill the fœtus under these circumstances; and, in my opinion, he is fully justified in so doing, because the welfare of the patient demands it. Would the essayist allow both the mother and fœtus to die in order to save his own conscience? According to the tenets of the paper he would.

As regards the legal tribunal to the verdict of which Dr. K. inclined, as a last resort, to refer cases of abortion. he would simply remind him that law is not infallible any more than medicine, and that innocent men have been hung on circumstantial evidence. He hoped that this Society would not indorse the idea that it is wrong, *under all circumstances*, to produce abortion.

Dr. A. P. Clarke said that many women are depressed and nervous during gestation, and need the encouragement of their physician in order that they may withstand the temptation to secure a miscarriage. To treat these patients judiciously so as to tide them safely over this critical period of depression, is the duty of the physician. Dr. Clarke believes that criminal abortions are less frequent than formerly.

Dr. Chas. R. Whitcomb thought that the physician was, to a certain extent, the custodian of the public morals, and should not assume to act as judge of life and death. He agreed with the conclusions of Dr. Kelly's paper, and did not consider abortion justifiable under any circumstances.

Dr. E. W. Cushing said that the arguments of the speaker were very old, and extremely well wrought out, as some of the acutest minds of the Catholic Church had been at work on the subject for centuries. The syllogism appeared perfect, and the conclusion inevitable; yet, in reality, the reasoning is somewhat sophistical, for one of the premises on which it rests is shaky. In substance the writer says that killing an infant to save the life of the mother is homicide; well, so it is. Moreover, that the only jus-

tifiable homidide is under certain circumstances which he describes, viz., self defence, command of civil authority, etc. Here is the weak point; where is his authority for excluding another category, *i. e.*, where the phvsician fulfils the unwritten law of civilized life and organized society, in taking a fœtal life to save another, the mother's, just as a General may send one man or body of men to certain death in order to save other and more important parts of his army.

Now, either we have to squarely admit the authority of the Roman Church to settle all matters of morals, or each man must help himself by the light of his conscience, guided, by the average opinion of his time and community, and by the concensus of the competent. Now we of the medical profession are the competent, and the concensus on this question is overwhelmingly affirmative.

The Protestant churches have no opinion officially on this question, as on many others, where medicine and morals come so near together that the Catholic church has seen fit to decide what is right and wrong. Let any one read Father Gury, or any of the ponderous Latin works on Roman Catholic moral theology, and he will find other points where modern society differs decidedly from the church. Judged strictly thereby we should most of us be damned anyhow, and in settling these questions we have to do as Nelson did when he put his blind eye to the telescope to read the signal to retreat, and, continuing the fight at his own risk, saved the battle and his own neck.

No one abhors criminal abortion more than I do, and I know that Dr. Kelly's Catholic friends will, in a generation or two, have the majority side of this whole question, for what with frequent abortions, and the studied prevention of conception, equally reprobated by the Catholic church, the Catholic birth-rate hereabouts is six to one of the Protestant, without counting the fact that every twelfth marriage in New England ends in a divorce, nearly all of these divorces being among Protestants. So that in a few generations New England will be a strong Catholic country, like Belgium. Now. however, this is not the case, and neither our civil organization nor our professional duties can be subjected to rules which, however logically they are worked out by men who never had any wives nor children, can be brought to a *reductio ad absurdum*, as here to-night, where Dr. Kelly maintains that it is wrong to kill a small extra-uterine fœtus by electricity, even when by not doing so we know that the child is nearly sure to die, and the mother is only saved, by exception, in rare cases.

In regard to the laws making every procurement of abortion a criminal matter, it is in the interest of the mother, primarily, that they are passed and enforced, for the legislators and courts do not in practice hold that the life of the mother must be sacrificed or greatly endangered to save that of the fœtus.

In regard, however, to abortion, it is evident that something must be done to check the most crying outrage and evil of our civilization, and any way in which physicians can help educate the community to a proper sense of the gravity and danger of the act or process of abortion should be welcomed.

Dr. Cushing did not believe that special courts could be established or worked, but would favor a regulation providing that in all cases requiring abortion or craniotomy the medical examiner of the district must be notified, and made a consultant, or at least exactly informed as to the necessity for the operation. In cases where the emergency does not admit of even a few hours' delay—and they are few—a formal notification should be required within twelve hours; in fact, the whole matter should be surrounded with the formality due where the life of a human being is involved. Until such legislation is procurable it ought to be the first and plainest duty of every physician proposing to kill a fœtus to get the best medical advice available, in consultation, and to remember, in cases requiring craniotomy, how successful the Cæsarean section has become in these modern times.

DR. H. C. WHITE said that to every medical man there comes a supreme moment when he is above the mandates of Church or State, and must act upon his own responsibility, according to the best light that he has. Under these conditions, how much less wrong is it to allow two lives to be lost than to save the more valuable one by sacrificing the life of an unborn and perhaps not viable fœtus? He said that abortion and craniotomy should not be performed until the best available counsel had been consulted, but that under circumstances where such aid could not be secured, he need not hesitate to sacrifice the life of the fœtus if he considered that unfortunate step necessary to save the life of the mother.

THE PRESIDENT said that he had listened to the paper and its discussion with more than ordinary interest. On his own part, he would be very glad to accept the views of the writer, since it saved the assumption of a grave personal responsibility, and reduced the question to a formalistic one. In the early days of the Church, when medical learning was, at the best, very imperfect, and the induction of abortion, or miscarriage, was followed by most grave dangers to the mother, the wisdom of the measure to save the life of one at the cost of that of another was a very doubtful expedient; and it was very likely safer to trust to nature. He did not understand that there was anything in the creed of the mother Church to prevent the saving of one life if it was evident two must be sacrificed by non-interference. To the Catholic mother, the baptism of the child was an important rite, and he had often performed it under the direction of the clergy. Under certain conditions this simplified the question. He had, however, recently seen a case, in consultation, of vomiting in pregnancy where death followed a few days later from exhaustion. His advice of inducing abortion had not been accepted, as the family were Catholics, acting under the special direction of their clergyman. In a considerable number of instances he had induced abortion where he felt he had thereby saved the life of the mother. In a certain class of cases he should not feel justified in refusing his services.

The suggestion of the author of submitting all this class of cases to a Board of medical men, specially appointed, presented some manifest advantages. It

would shift the responsibility from the general practitioner, and at the same time secure a much safer result to the patient by ensuring competent service. It would not be pleasant to contemplate such a "Board" of legally constituted executioners, and out of large cities would be impracticable. For good reason, it may be assumed abortions for the real purpose of saving the life of the mother are now rarely undertaken, except after a careful consideration of the whole subject in consultation.

Dr. Kelly, in closing the discussion, said that he had but little to add to the paper which he had read. His desire was to induce the discussion of the subject, and he had succeeded most agreeably. He was pleased that so many of the speakers coincided with his views, and he would reiterate his convictions that the fœtus, although incapable of defending itself, should have extended to it the same degree of justice as that which every other individual receives from his fellow-men, and that it is unjust and unwise to impose upon the members, fallible or infallible, of the medical profession the duty, appalling upon reflection, of sentencing, single-handed, and executing a living and sentient fellow-mortal. The expressions of the speakers indicating their belief that it is their duty to perform abortion in certain cases, convinced him that they had not considered the subject in all its bearings, and he should be pleased if his paper induced them to reconsider their position of one-sided justice. Laws were not made for the just man, but for those who are unrestrained by higher or nobler precepts. Freedom of action requires careful limitation, as without this the convictions of a madman could be quoted in extenuation of his freaks, and it would be illogical to permit the individual to indicate the line at which freedom of opinion should give place to legal or religious restraint. There are many acts, some of them most repugnant, which are perfectly legal, and yet no self-respecting man would think of performing them. Legality, necessity and expediency do not afford sufficient excuse for acts which are naturally, initially and fundamentally wrong. The declaration of our unalterable conviction of the probity of our acts may sometimes deceive or satisfy those in whose interests those acts are performed, but it does not appease the "still, small voice within."

Dr. H. O. Marcy exhibited specimens of

WOOL FOR SURGICAL USE

prepared by the Globe Pharmaceutical Company of Boston, and said: Absorbent cotton, as is well known, is the pure fibre, freed from the vegetable oil which, in an extremely thin layer, covers each filament. For certain surgical purposes, this is unequalled by any other material. However, the fibres mat together in such a way, that the secretions from wounds permeate the dressing imperfectly, and drying, cause an incrustation which prevents the escape of fluids and thus retards rapid repair, even in aseptic wounds. More recently, wool fibre has been recommended and received the approval of a considerable number of prominent surgeons. The wools which I have used have been so imperfectly prepared that I have found them objectionable. These specimens from the Globe Pharmaceutical Co., of Boston, merit your commendation as being clean, free from oil and therefore absorbent, although in a less degree than cotton, and aseptic. The fibre is carefully carded and is separable into sheets as desired, and impregnated with mercuric bichloride 1–2000. As a vaginal packing, by its elasticity, it often aids materially in the retention of a replaced uterus, while it is more comfortable than the cotton tampon, and more easily permeated by fluids. Because of its greater porosity, it admits of a much freer drainage, thus rendering it especially adapted as a dressing for wounds, fitting irregularities and much less liable to displacement. As a padding for splints, especially with fixed dressings, *e. g.*, plaster, it leaves little to be desired. Wool receives and retains the various antiseptics better than cotton, particularly iodoform, which is distributed through it better than through cotton, even when woven into the thinnest gauze fabrics. Wool dressings, when properly prepared, deserve to receive a permanent place in the armamentarium of the modern surgeon.

DOMESTIC CORRESPONDENCE

POTASSIUM CHLORIDE.

To the Editor of the Journal:

Dear Sir:—After reading Dr. A. F. Pattee's article on "Potassium Chloride," in The Journal for July 24, 1886, I concluded to give it a trial in several stubborn cases, and the result has been all that I could wish. In myalgia, or psuedo-rheumatism, it has proved very efficacious; in induration left after pelvic cellulitis, and in glandular enlargements, I have found it a valuable remedy.

Yours truly, G. W. Wilber, M.D.

Philadelphia, Pa., Oct. 22, 1886.

BOOK REVIEWS.

Traité des Résections et des Opérations Conservatrices qu'on peut pratiquer sur le Système Osseuse. Par L. Ollier, Professeur de Clinique Chirurgicale à la Faculté de Médecine de Lyon, etc. Tome Premier; Introduction—Résections en Général; avec 127 Figures.

A Treatise on Resections and Conservative Op, erations on the Osseous System. By L. Ollier-Professor of Clinical Surgery in the Faculty of Medicine of Lyons. Vol. 1, Introduction—Resections in General. With 127 Figures. 8vo., pp. vi—664. Paris: G. Masson. 120, Boulevard Saint-Germain. 1885.

It was Professor Ollier's intention not to issue the two volumes of his work separately; and it could be wished that our European confrères would all have such intentions and carry them out. But in this case so many difficulties and obstacles arose which delayed the completion of the second volume that the first

has been issued long in advance of the second. And now that the great author has passed away it is with some solicitude that we await to see if the second will come at all. The first volume is devoted to an exposition of the general questions and rules which should serve as guides for all resections, and nothing is omitted. It also contains the operative principles of which the applications are reserved for the second volume when the subject of particular resections is taken up. Necessarily the questions of method should precede those of procedure. "To-day, when thanks to asepsis and antiseptic methods," says the author, "the most useless and irrational operations may be attempted with impunity, it is particularly necessary to determine the indications for operations, and to thoroughly recognize the remote and definite results of every surgical procedure. . . . In surgery success justifies nothing in itself. The ability to do certain operations without great danger does not give us the right to practise them. . . . Since the development of antiseptic methods the operative mania, the *prurigo secandi*, with which certain surgeons have been attacked, has certainly lead to many useless operations. In judging of the value of many resections and other conservative operations which may be done on the bony system, the immediate result is insufficient." We would gladly quote more from this preface, so full of medical common-sense.

In an introduction of 119 pages the author reviews the history of resections (46 pages), and gives the fundamental physiological facts relating to these operations. His account of his experiments on bone and periostium is exceedingly interesting, and well illustrated with 33 cuts.

In the first chapter of the book proper the author deals with the technique, indications and general results of resections. The second chapter, of almost 50 pages, is devoted to a discussion and description of the instruments used in resections, and has 47 illustrations, many of them of American instruments. The third chapter deals with the general rules in 60 pages. The fourth chapter, of 33 pages, deals with the post-operative treatment of resections. The fifth chapter, 100 pages, deals with reparative processes, and regeneration of bone after resections. The general indications for resections are given in a short chapter of about 23 pages. A chapter of 70 pages is devoted to the indications for pathological resections. The traumatic indications are given in a chapter of 34 pages. The remaining 140 pages are devoted to orthopædic and osteoplastic resections, and to the remote and general results of the operation. Throughout the book bears the mark of the hand of the great master of bone surgery, and is a monument to his great learning, patience and surgical skill.

MISCELLANEOUS.

NEW YORK STATE MEDICAL ASSOCIATION.—The third annual meeting of this Association will be held in Lyric Hall, New York City, on November 16, 17, and 18, under the Presidency of Dr. E. M. Moore, of Rochester. The meeting promises to be one of the most interesting medical gatherings ever held in this country. There will be a general discussion on gunshot wounds of the intestines, on pulmonary tuberculosis, and on puerperal eclampsia.

COCAINE ADDICTION.—If any reader of THE JOURNAL has met with a case of cocaine addiction and will send me the fullest details at his command, I will thank him for the courtesy, reimburse him for any expense incurred, and give him full credit in a coming paper. J. B. MATTISON, M.D.
Brooklyn, 314 State St.

NOSTRUMS IN GERMANY.—The *New York Evening Post* says: "What a commotion there would be among our patent-medicine venders if the New York police followed the example of the Berlin police, who are continually issuing warnings to the public, of which the following is a specimen: 'The tradesman, Paul Heider, of this city, Anklamer street 28, is selling under the name of "Harz Mountain Tea" a mixture of lavender flowers, sassafras root, peppermint, and several other plants, weighing 50 grammes. His price is 50 Pfennigs, and he advertises it as a remedy. Official analysis has shown that the real value of one of these packages is hardly 10 Pfennigs.''

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 23, 1886, TO OCTOBER 29, 1886.

Major Warren Webster, Surgeon, leave of absence on account of sickness further extended one year on account of sickness. (S. O. 244, A. G. O., Oct. 20, 1886.)

Major J. S. Billings, Surgeon, granted leave of absence for eight days. (S. O. 246, A. G. O., Oct. 22, 1886.)

Capt. John V. Lauderdale, Asst. Surgeon, leave of absence extended one month. (S. O. 249, A. G. O., Oct. 26, 1886.)

Capt. Jos. K. Corson, Asst. Surgeon, granted leave of absence for one month, to take effect when his services can be spared. (S. O. 246, A. G. O., Oct. 22, 1886.)

Capt. E. B. Moseley, Asst. Surgeon, relieved from duty in Dept. of the Columbia, and ordered to report in person at hdqrs Div. of the Pacific for assignment to duty. (S. O. 87, Div. Pacific, Oct. 16, 1886.)

Capt. B. D. Taylor, Asst. Surgeon, from Dept. East to Columbia Bks, Ohio.

Capt. L. S. Tesson, Asst. Surgeon, from Dept. Texas to Dept. East.

First Lieut. C. C. Barrows, Asst. Surgeon, from Dept. Arizona to Dept. East.

First Lieut. P. A. Egan, Asst. Surgeon, from Dept. Arizona to Dept. Texas.

First Lieut. F. V. Walker, Asst. Surgeon, from Dept. East to Dept. Texas. (S. O. 244, A. G. O., Oct. 20, 1886.)

First Lieut. E. C. Carter, Asst. Surgeon, granted leave of absence for six months, with permission to apply for an extension and to go beyond sea, to take effect when his services can be spared. S. O. 244, A. G. O., Oct. 20, 1886.)

First Lieut. Chas. S. Black, Asst. Surgeon, granted leave of absence for two months, on surgeon's certificate of disability, to take effect when his services can be spared. (S. O. 244, A. G. O., Oct. 20, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING OCTOBER 30, 1886.

Diehl, Oliver, P. A. Surgeon, U. S. N., granted three months' leave from 26th inst.

UNITED STATES ARMY
SURGEON GENERAL'S DEPARTMENT.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, NOVEMBER 13, 1886. No. 20.

ORIGINAL ARTICLES.

PUERPERAL ECLAMPSIA.

A History of My Personal Experience during a Practice of Thirty-five Years.[1]

BY BEDFORD BROWN, M.D.,

OF ALEXANDRIA, VA.

PRESIDENT OF THE STATE MEDICAL SOCIETY OF VIRGINIA; MEMBER OF THE STATE BOARD OF MEDICAL EXAMINERS.

I do not propose in this paper to present any very novel views or discoveries in regard to the pathology or treatment of puerperal convulsions, but I wish to tell you what methods I have found best for the relief of this affection, and what I have not found good, during a professional experience extending over a period of thirty-five years.

A history of the results of the close and studious observation and of the experience of any man of ordinary powers of thought and intelligence on any single subject of importance is always worth something to his fellow-workers in the profession, and may prove of sufficient interest and value to be placed on record. The only apology I have to offer, in presenting this paper, is the simple desire to perform my share in the work of contributing to the success of this Society, trusting that others may be stimulated to follow the example.

The amazing rapidity and suddenness of the onset of an attack of eclampsia, the brief time allowed us within which to work for its relief, and the great mortality of the disease, unite to render it one of the most appalling affections to which the female is liable. Authors estimate the rate of mortality at 33⅓ per cent. We thus perceive that puerperal eclampsia in its rate of mortality approaches that of some of the most deadly of the acute diseases. These facts invest the history of this affection with peculiar interest. I know of no scene in the experience of the physician better calculated to arouse the sympathy, to elicit the commiseration, and to excite anxiety and alarm, than a violent attack of puerperal convulsions. Just at that period when friends and patient are full of hope, and anticipating a happy deliverance from a protracted burden and the pleasures of a joyful maternity, in a moment of time, in the twinkling of an eye, the angelic countenance of her who as wife and mother has entwined herself around our hearts in the tenderest cords of love and affection, is suddenly changed from a picture of loveliness and beauty to one the most hideous and repulsive. As often as it has been my lot during the past thirty-five years of my professional career to witness these distressing scenes, and to pass through them from beginning to end, I have never been otherwise than profoundly impressed with the gravity of the occasion. We know that puerperal eclampsia, unlike most of other convulsive diseases, is not a self-limited affection. In this affection, when nature is left unaided or trifled with, she is unequal to the emergency. Without prompt and efficient medical aid, life must surely succumb to the attack. Hence, whatever is done must be done quickly, but with judgment and discretion.

The pathology of puerperal eclampsia is manifestly of a complex character, in which are involved many important structures and functions. Hence, in our study and management of the disease, we should be guided by the condition of the circulation, the temperature, the renal functions, the secretions generally, the intellectual faculties. Those who have investigated the morbid anatomy and pathology of eclampsia have detected positive indications that death may result from a variety of causes in the form of local lesions, and not always simply from the direct effects of uræmic poisoning. Active congestion, serous effusion in and thrombosis of the brain, acute meningitis, œdema of the lungs, true asphyxia—all of these are either the result of puerperal nephritis or eclampsia. It has been my rule in these cases to study the particular tendency to death, and to use all means to avert it.

Condition of the General Circulation.—One of the most prominent features of eclampsia, apart from the convulsive symptoms, is seen in the unbalanced state of the circulation. Probably it is fair to estimate that during each convulsion and a good portion of the intervals, two-thirds of the entire blood of the body accumulates in the venous system. The suspension of respiration during and after each paroxysm produces an universal stasis of blood of the whole venous system.

Another conspicuous morbid change in the condition of the circulatory organs in puerperal convulsions, arising from the combined influence of acute nephritis and the plethora of pregnancy, is an increased arterial tension and blood pressure. In my entire experience, this phenomenon has been present in more or less degree in every case.

[1] Read at the Annual Meeting of the State Medical Society of Virginia, October 17, 1886.

The impulse of the heart is always increased in force, and often in area. And while the cardiac sounds may be healthy in tone and rhythm, they are decidedly higher in pitch. The pulse is bounding in character, more frequent in rate, with a certain degree of fullness, firmness and tension reminding us of a genuine inflammatory type.

Now let us for a moment inquire the meaning of these peculiar pathological phenomena. Has this state of things any significance as an indication? Does all this development in circulatory force imply in reality increased blood pressure, or merely an explosion of nervous energy stimulated by the extraordinary occasion? Or does it mean, in truth, that the left ventricle, abnormally increased in muscular power and nervous force by the combined influence of pregnancy and acute nephritis, is sending a column of arterial blood through the system with at least 25 per cent. increase in gravity and force?

We are called upon, here, to decide the question whether these peculiar phenomena of the eclampsia circulation are merely indications of nervous excitement, or whether they are actually due to increased arterial tension and power, and portend danger to the structure of the brain itself from excess of blood pressure. During the progress of eclampsia, numerous superficial arterioles before imperceptible may now be observed in a state of vigorous action, pulsating forcibly and rapidly. If this be an indication of increased arterial tension and blood pressure, then this increase of force must be brought to bear upon the blood-vessels of the brain with irresistible power. Hence the brain, in these cases, appears to be the central point upon which morbid action and force are concentrated. I believe it to be our imperative duty, in the management of eclampsia, to guard the brain carefully against all danger if possible.

We have mentioned in a cursory manner the arterial pressure present in acute puerperal nephritis and eclampsia, and the greatly increased action of the heart and arterial system. It now remains to treat of the venous pressure which is always induced in these cases by the convulsive movements and interruptions to respiration, and the dangers arising from this source. Venous obstruction and pressure begin with suspension of the respiratory act. Obstruction in the pulmonary circulation throws the column of venous blood, charged with carbonic acid, back on the pulmonary artery, then on the right cavities of the heart, the venæ cavæ, the sinuses of the brain, the hepatic veins, the liver and its great portal circulation. We thus are to some extent enabled to realize the extent of this enormous venous pressure on the vital organs, and the injury sustained by the organism from the accumulation of carbonic acid poison during each act of convulsion. This is a brief and imperfect statement of the mechanism of blood pressure, arterial and venous, as found in puerperal eclampsia.

The danger from this increased arterial tension and venous obstruction is the production of active and passive engorgement of the brain and lungs, apoplectic extravasations of biood, cerebral thrombosis, serous effusion within the cavities of the brain, actual meningitis, compression of the cerebral structures, and œdema of the lungs. These lesions constitute a not infrequent cause of those grave and fixed cases of puerperal coma arising in eclampsia. As stated, œdema of the lungs is a frequent accompaniment of puerperal eclampsia. It is a complication of sufficient importance to merit a passing notice here. The great difficulty of respiration, the brief and hurried inspirations, the lividity of complexion, the copious secretion of mucus in the bronchial tubes and trachea, indicate the enormous obstruction and engorgement in the pulmonary circulation and the effusion of serum in the connective tissue of the lungs. Auscultation will in these cases usually reveal the presence of extensive subcrepitant râles. In a case of puerperal eclampsia with profound coma under my charge, extensive subcrepitant râles existed throughout both lungs. The respiration was the most labored, rapid and painful ever witnessed by myself.

I find that puerperal eclampsia may be accompanied with two opposite conditions of the blood and general circulation: Plethora, with its excess of red corpuscles, fibrin, and redundancy of blood mass, may exist; or a state of extreme anæmia, or hydræmia, with increase of white corpuscles, diminution of red globules, increase of serum and albumin. I am convinced that the former state predisposes to active congestions of the brain, while the latter tends to produce serous effusions in the brain and lungs. I am also persuaded that a thorough realization and appreciation of these facts may enable us to take measures to avert these tendencies. I have time after time seen the spasmodic and comatose symptoms of puerperal eclampsia relieved by a timely bleeding, full catharsis, a few doses of veratrum, and the labor terminate by natural means, while the consciousness of the patient was restored, and yet the urine was loaded with albumin.

Hydræmia is a very frequent concomitant of puerperal convulsions. While the complexion is always pallid in these cases, the extremities anasarcous, the patient debilitated, easily exhausted, and prone to difficulty and oppression of respiration, the temperature is often one or two degrees above the normal standard. The pulse is quick and bounding, and the arterial tension decided. The condition is essentially one of febrile anæmia.

Pyrexia.—In a considerable proportion of cases coming under my observation increase of temperature has been present; occasionally not more than half a degree, but not infrequently one or two degrees. It is probably due to a combination of causes, and I think is an important indication. On the contrary, an abnormally low temperature I regard as indicating a dangerous condition. I think that the clinical thermometer can be used here, as in other affections, as a valuable prognostic. Increase of temperature usually denotes active congestion, extravasation of blood in the brain, meningitis when the general condition is plethoric, and serous effusion in the brain or acute œdema of the lungs when hydræmia is present. In a case of acute œdema of the lungs in eclampsia the temperature rose 10°.

Treatment.—In beginning the treatment of puerperal eclampsia it is an important question to decide

whether we should not place the patient under anæsthetics, dilate the os uteri by mechanical means, and deliver with instruments at all hazards; or by appropriate treatment subdue arterial tension, relieve blood pressure and congestion, eliminate from the system the ammoniated poisonous materials in the form of urea, and control reflex excitability and spasmodic tendency, thereby placing the patient in a position of safety, and then permit nature to finish the work.

I have on many occasions pursued the latter course with the best results. The three most important principles to be carried out in treating puerperal eclampsia are, I believe, the prompt reduction of arterial pressure or tension, elimination of effete matter from the system, and the absolute sedation of the reflex functions of the spinal cord. Thus it will be seen that, inasmuch as the pathology of eclampsia is complex in character, involving various and important elements, in like manner our method of treatment must, to a considerable extent, be varied. In my opinion, we cannot in safety depend upon any single remedy. Thus, I have found it unsafe to trust either to depletion, anodynes, anæsthetics or cathartics alone. In my past experience, whenever I have departed from this rule in the treatment of eclampsia, I have had cause to regret my course.

General Depletion.—I will repeat my statement here, that of the twenty-five cases which have come under my observation during the past thirty-five years, in all there existed more or less arterial tension and increased blood pressure, which constituted a factor of importance in the progress and termination of the disease. With a view of averting the evil consequences of this influence on the circulation of the brain, I am convinced that depletion is a remedy which cannot be dispensed with in the treatment of eclampsia. I can say with truth that all my cases in which depletion was resorted to early, freely and judiciously, have recovered with a single exception. In this case, after moderate depletion, anæsthetics were used too freely, to the exclusion of other remedies. One of the earliest and most manifest effects of depletion is that of unloading the engorged venous system, the lungs, the right cavities of the heart and the cerebral circulation. If the combined influence of inordinate action of the heart and excessive engorgement of the venous sinuses of the brain, be permitted to continue, the delicate structures of that organ must suffer irreparable injury from pressure and profound coma result. In these cases of profound coma with stertorous breathing, frequent and bounding pulse, increased temperature, when the scene is varied by repeated paroxysms of spasms, let us not be misled in our treatment by any false theories in the pursuit of a vacillating policy. There is absolute safety in the lancet judiciously and timely applied under these circumstances. The state of pregnancy, above all other conditions, is the most tolerant of depletion. The enormous quantity of blood often lost during labor without serious results sustains this opinion. The measure must not only be resorted to early to avert impending danger to the cerebral structures, but copiously, to break down permanently arterial pressure. From sixteen to twenty-four ounces will probably suffice to cause a decided amelioration of the symptoms. As a usual result, the action of the heart will be slowed, the pulse will become soft. The impulse of the organ will be diminished, temperature will decline, coma will be partially relieved, consciousness will return temporarily, and cyanosis will diminish. But depletion cannot accomplish everything. There may be a return of trouble. But when these desirable objects have been obtained even temporarily, we have a favorable basis for the application of our eliminative, anæsthetic and sedative remedies.

The Use of Mercury in Eclampsia.—I have lived sufficiently long to have passed through various phases and changes of professional opinion in regard to the pathology and treatment of disease. I have seen theories and systems rise up and rejoice in professional favor, then decline and pass away, to be again revived and adopted. Thus it will be seen that while our profession is steadily marching on in the line of progress, we operate somewhat in a circle. Those of us who began their professional career thirty-five or forty years ago, remember full well the mighty sway which mercury held over the mind of the profession. It entered largely into the therapeusis of almost all diseases. At a subsequent period we witness its sad disgrace, downfall and almost violent expulsion from the practice. It was hooted, jeered, denounced and universally condemned in fashionable practice. But again we see professional opinion, beginning this time in scientific Germany, taking another tack and now paying court to this once wretched outcast and recalling it to favor; not, probably, as extravagantly as of yore, but more rationally and conservatively. I have lived to esteem it my best friend, then to regard it as a suspicious subject, but finally one of my most valued agents in battling with disease. In the therapeusis of puerperal eclampsia and nephritis I esteem mercury a valuable agent as a cathartic and alterative. This opinion is based upon sound experience. As an evacuant and stimulant to the entire system of emunctories and secretory organs it has no equal. It stimulates and gives impetus to the secretory functions of the kidneys, liver and intestines. It exerts a remarkable alterative action on the constituents and organism of the blood, often arresting the disorganizing influence of disease.

The first case of puerperal eclampsia which came under my care, in the year 1851, was treated by means of depletion, mercury and ergot. The case was an exceedingly violent one, but recovered. Calomel was given in scruple doses every three hours until it acted as a cathartic most copiously. It also acted as a diuretic. After the birth of the child the patient remained comatose for twenty-four hours. Notwithstanding the patient had been effectually salivated, her restoration in every particular was speedy and uninterrupted.

At a subsequent period, when it became fashionable for high medical authorities to condemn the use of mercury in acute nephritis in any form, I abandoned its use for a time in puerperal eclampsia, but with a decline in my former success. I have again returned to its use in puerperal eclampsia, with equally

good effects. To obtain the favorable action of the remedy it should be administered in scruple doses every three hours until its cathartic and diuretic action is procured. I would again call the attention of the profession to the diuretic action of mercury. In acute nephritis, whether from cold, scarlatinous poison or puerperal causes, I have repeatedly witnessed the action of mercury on the functions of the kidneys, arousing them from a state of inactivity when other remedies have failed.

Cathartics.—Prompt, decided and thorough efforts to establish elimination of the uræmic poison from the system is probably one of the most rational as well as indispensable means of removing the real mischief. The renal outlet is in a manner closed. Thorough elimination through the skin is too uncertain in so great an emergency. For the relief of effusion in the brain, œdema of the lungs, venous engorgement, and uræmic coma, copious purgation is one of the most effectual remedies in our possession. And there is no class of patients which tolerate catharsis better than these eclampsic females. This fact may be laid down as a law in the therapeusis of eclampsia. In all of my cases which recovered cathartics were used boldly and fearlessly. In all the fatal cases they were either not used at all or sparingly. This I deem a fact of practical importance. I have never had cause to regret their prompt and free administration, but often deplored their too limited use. They not only eliminate from the system urea and other effete matters, but remove that redundancy of serum and albumin with which the system of the eclampsic patient is charged, thereby diminishing blood pressure and the tendency to congestion and serous effusion in the vital organs.

My practice in these cases is to give 15 or 20-grain doses of calomel, repeated in two or three hours, followed by drop doses of croton oil in mucilage every hour until copious catharsis is obtained. Subsequently, if the desired relief to congestion and coma is not secured, the dose of mercury is repeated every three hours until further action on the abdominal organs is obtained. At this stage the cathartic and wonderful alterative influence of the remedy on the entire system, in giving relief to the morbid processes, may be calculated on with almost a certainty. In some cases I have given calomel in combination with gamboge with good effect, where there existed great torpidity of the intestinal canal and kidneys.

Anæsthetics.—In the administration of anæsthetics in puerperal eclampsia I have found it safe to act upon the rule that these agents should not be used for the purpose of maintaining a prolonged state of unconsciousness or insensibility, but are in reality designed to control inordinate reflex action, and in that way quiet all convulsive movements. In treating eclampsia we do not wish to produce coma, but merely a suspension of spasmodic action until the morbid causes are removed by depletion, cathartics, and delivery. I think in administering anæsthetics in convulsions we sometimes make the mistake of acting on the same principle which governs us in the use of these agents in surgical operations, viz.: to obliterate all consciousness and sensibility completely for a protracted period, thus inducing a genuine artificial coma. In the progress of eclampsia the tendency is always towards coma. Hence, I regard it a principle in the treatment of this disease that all things should be avoided which tend in that direction. Nevertheless, anæsthetics are of infinite value in the treatment of convulsions I find that they act best when used just in the beginning of each convulsive seizure in sufficient quantity to abort the paroxysm. If given much during the intervals, in my experience they increase the tendency to coma, and pushed to the extent of increasing this tendency, the effect becomes dangerous.

Some of the best successes which I ever had were before the introduction of anæsthetics in the treatment of this disease. It is desirable, if possible, for the mental faculties to emerge from each paroxysm lucid and clear. Chloroform in moderate quantities modifies reflex action and controls spasm. But in larger quantities frequently given it destroys all consciousness and impairs the recuperative energies of the brain, endangering the respiratory and vaso motor centres. Chloroform does not eliminate the poison urea, the prime cause of the trouble, from the system. Neither does it reduce arterial tension, blood pressure, and the tendency to congestion and œdema. I have seen eclampsia patients die from coma under chloroform treatment, with all the symptoms of congestion and blood poisoning. As a sedative in eclampsia I have found chloral a valuable agent when given in drachm doses *per rectum*. I regard it as a more efficient anti-reflex agent than chloroform when combined with the bromides. It does not depress the respiratory and vaso-motor centres as chloroform, and is very efficient in controlling reflex action, and gives time for the operation of more permanent remedies.

The object of anæsthetics, anodynes, and sedatives in puerperal eclampsia is not to depress too much the vital powers of the brain or the medulla, so as to endanger the faculty of consciousness and function of respiration, but to suspend for a time the reflex functions of the cord, which from some unexplained reason are thrown into an inordinate state of erethism in puerperal nephritis. Just how this very desirable object can be attained is a matter of exceeding interest and importance. The wonderful developments in our knowledge of late of the therapeutic and physiological actions of remedies on the nervous system, I am satisfied will point to us a way. I am sure that this end has been accomplished in my own practice.

Thus, to be able to strike that happy medium in our practice which can relieve disease without inflicting injury, is a fortunate attainment. For some years past it has been my method to give moderate quantities of chloroform in the beginning of and during the paroxysm, and then permit the patient to rest. This proceeding will usually abort or modify greatly the attack. In seeking for a sedative agent of great anti-reflex powers without action either over the powers of consciousness or sensibility, probably veratrum viride stands foremost. This drug, while exerting a wonderful influence over the vaso-motor system,

slowing the action of the heart, reducing arterial tension and blood pressure, is also equally active in controlling the reflex power of the cord, which under these circumstances has lost all powers of inhibition. With chloroform given in this way, chloral and the bromides, and veratrum, I believe we can so manipulate these agents in these cases as to suspend reflex action without the induction of coma or arresting the respiratory function.

These potent agents in eclampsia constitute our brakes to arrest the uncontrolled and unregulated machinery of the nervous system, and once more bring it back to methodical working.

I can say here, in all truth, that in numerous instances in my experience where the above mentioned principles had been judiciously applied, where the system had been prepared by depletion and cathartics, mercurial and otherwise, the convulsions, however violent, and the coma, however profound, have yielded, consciousness and perfect sensibility have returned, and the case being left to the powers of nature to finish the delivery. Furthermore, in relation to the action of veratrum, it regulates the unbalanced circulation, and in this way relieves engorgement and active congestion. The tincture of veratrum I find in these cases is given with greater advantage hypodermically in 10-drop doses every two or three hours until the object is accomplished.

Ergot.—In my first six cases of eclampsia, after complete relaxation of the os uteri and perineum had been secured by depletion and cathartics, and the fœtal head had descended into the cavity of the pelvis, ergot in infusion was given in large doses per rectum to complete the labor. In all of these cases the results were favorable, the labor being speedily and easily terminated. Under the circumstances, I believe the practice not only right and proper, but good, as proved by the results. I observed then the favorable action of the ergot on the nervous centres, as a sedative on the reflex powers, and as an agent to lessen hyperæmia, a therapeutic property of ergot then unknown, but now well established. I observed that while the pains of labor grew much more forcible and frequent, the congestive symptoms of the cerebral circulation diminished, and the patient became more conscious.

Under similar circumstances I would not hesitate now to administer the ergot for the purpose of terminating the labor, with the expectation, also, that the therapeutic action of the remedy would diminish cerebral congestion and reflex action, and in this way relieve the brain. I therefore cannot otherwise regard this drug than as a valuable adjuvant to our therapeutic armamentarium in the treatment of this affection.

Instrumental Delivery.—There are cases of labor in which no treatment seems capable of accomplishing relaxation of the os uteri, while the head remains above the brim of the pelvis, and in which the labor pains are totally inefficient, while the eclampsia symptoms are not modified or relieved by treatment. Prompt and speedy delivery here becomes our only resource. The only question under these circum stances to decide is the safest and best method. Happily, we now possess instruments which were formerly unknown, that are capable of accomplishing complete dilatation in these cases with safety to the patient, when the forceps can be applied under anæsthesia.

The instrument which I prefer is the Molesworth dilator. It is easily managed and is adapted to all cases. I find it admirably adapted to the dilatation of the os uteri for removing the dead fœtus or retained secundines in abortion. Thirty years ago I attended the case of a very large and robust young female slave in her first labor, in which there existed a perfectly impacted head, and notwithstanding the pains were frequent and violent, there was no progress. In this condition of affairs the patient was seized with a fearful attack of convulsions. I am sure it was the most violent attack which ever came under my observation. The nurse informed me that she passed through 120 paroxysms. Copious depletion, purgation, and mercury with tinct. of veratrum to reduce the high arterial tension and control reflex action, succeeded in subduing spasm. Delivery by means of turning and the forceps was attempted, but failed. I finally succeeded in delivering the woman by means of the vectis of a dead child weighing sixteen and a half pounds. I should have mentioned that in this case there was absolute suppression of urine, as none could be found in the bladder. This fact is of interest, and shows conclusively that the life of the patient was saved through the active eliminatory treatment to which she was subjected. Though in labor forty-eight hours, with suppression of urine for twenty-four, the kidneys began to act after the mercury and veratrum had made their specific impression on the system. Though somewhat salivated, the patient made a satisfactory recovery.

I regard this case as a fair example of what can be accomplished for the relief of these cases of eclampsia with profound coma and suppression of urine. The establishment of a copious drain of effete matters through the intestinal canal by means of cathartics acts as a vicarious discharge in place of the secretion of the paralyzed kidney. I will make a passing allusion here to a condition that occurs in the progress of bad cases not unfrequently. It is characterized by great prostration, excessive frequency and fullness of the pulse, cold extremities and pallid complexion, and either great restlessness or stupor. I have found no remedy to act so favorably in reëstablishing reaction of the depressed circulatory and nervous powers as tinct. of belladonna in 10-drop doses, given either with $\frac{1}{8}$ of a grain of morphia to correct restlessness, or without it when contraindicated, every two or three hours.

With the design of illustrating more clearly the foregoing views relative to the pathology and therapeutics of eclampsia, I will cite briefly the history of certain cases:

Case 2.—This, the second case which came under my observation, occurred in the year 1852. The subject was a young married woman remarkable for her vigorous and healthy physique and fine constitution. She was attacked with violent eclampsia in the very beginning of labor, and soon lapsed into coma. The convulsions were both rapid and pro-

longed in duration. The os uteri was rigidly contracted. The urine was scanty and almost suppressed, but was not tested, as at that period not much importance was attached to that question. Our knowledge of the relations of eclampsia and nephritis was exceedingly crude at that time. The pulse of this patient was frequent, very firm, hard and full. The temperature was above the normal standard. Acting on the principle that this state of the circulation endangered the brain, twenty-four ounces of blood were promptly abstracted from the arm. This procedure modified the intensity of the symptoms manifestly, and afforded partial relief to the oppressed brain. Calomel was then administered in 10-grain doses every two hours until it acted on the bowels moderately. This was followed by 1-drop doses of croton oil every hour until most copious purgation was obtained. The convulsions were now in great measure subdued, but partial coma continued. At this stage there was complete relaxation of the os uteri, the pains were regular, and the fœtal head had descended to the cavity of the pelvis. With the design of facilitating labor the infusion of ergot was given per rectum, with the effect of terminating it speedily, and relieving the existing coma. In a few days moderate salivation ensued.

I will mention here the manner in which the kidneys responded to the mercurial influence. When the mercury began to act as a cathartic the renal functions also began to return and continued to improve, notwithstanding the patient was laboring under salivation.

Case 25.—This case is presented here because of its analogy in every respect, in features and treatment, to case No. 2. The patient was a young married woman with her first child. She was pale, rather anæmic, and anasarcous. The urine contained 60 per cent. of albumin. The first dilating pain ushered in a most violent and prolonged convulsion, which left the patient in deep coma, with stertorous breathing and intensely swollen face. The paroxysms continued every thirty minutes. The pulse in this case was strong, bounding and rapid. The temperature was 102°. After attempting to subdue the convulsions by means of chloroform without success, blood to the amount of twenty-five ounces was abstracted. This speedily abated the violence of the case. Calomel was then administered in 20-grain doses every three hours, in combination with 2-drop doses of croton oil, until copious purgation was secured. In the meantime 10-drop doses of tinct. of veratrum viride were also given every three hours. The only hypnotic which the patient took during this time was 2 scruples of chloral by enema.

The combined action of the cathartics and veratrum very promptly controlled spasmodic movements, relieved the brain and restored consciousness completely. Such was the favorable condition of the patient now, there being complete relaxation of the os uteri and perineum, the fœtal head rapidly advancing, the case was left to the powers of nature to finish, which they did satisfactorily. The mercury and depletion, as in the former case, tended decidedly to promote the renal secretions and relieve engorgement of the kidneys. I cite this case as an example of the powers of depletion, purgatives, mercury as an alterative, and veratrum viride in controlling reflex action, subduing spasm, relieving coma, restoring consciousness after twenty-three violent convulsions, and enabling the patient to pass through a perfectly natural labor with ease. This is the last case which came under my observation.

Case 12.—Mrs. C., a young married lady in her second pregnancy, at term was attacked, while asleep in the night, with violent convulsions, and immediately passed into a comatose condition. The pulse was frequent and rather hard. There was almost total suppression of urine. The small quantity found in the bladder contained a large proportion of albumin. After a very moderate bleeding, chloroform was used almost exclusively to control the convulsions, by the advice of a medical friend. Finally, while the spasmodic symptoms ceased, profound coma ensued, in which condition she was delivered with forceps. The patient died without having recovered consciousness. I believe if the patient had been subjected to the cathartic and alterative mercurial treatment similar to the former cases, the result might have been different.

Case 7.—This case occurred in 1857. The patient was a very robust young female slave in her first pregnancy. She was attacked with violent convulsions during the stage of dilatation. The pulse was firm, full and frequent. There was considerable increase of temperature. The comatose symptoms were continuous. The urine was exceedingly scanty. The os uteri was rigid and undilated. Twenty-five ounces of blood were abstracted, with very decided amelioration of the symptoms. One scruple of calomel was given every two hours until it acted copiously as a cathartic. These measures not only relieved the high degree of arterial tension, but caused complete relaxation of the os uteri and perineum. The fœtal head having descended into the pelvis, ergot in infusion was given per rectum, which speedily terminated the labor.

The patient recovered consciousness while under the influence of the ergot. I regard the results in this case as a further vindication not only of the value of the eliminative treatment in eclampsia, but also of the good effects of ergot on the nervous centres and as a parturient in these cases. The mortality in all the cases treated amounted to one in five.

PUERPERAL FEVER, AND THE EARLY EMPLOYMENT OF ANTISEPTIC VAGINAL INJECTIONS.[1]

BY GUSTAV ZINKE, M.D.,

OF CINCINNATI, OHIO.

In bringing up this subject, I do not intend to enter into the details of puerperal fever, but simply to consider the value and necessity of antiseptic, or, simply, warm water injections, as recommended for prophylactic purposes in normal cases of labor oc-

[1] Read in the Section on Obstetrics, at the Thirty-Seventh Annual Meeting of the American Medical Association.

curring in private practice. Let it be well understood that my remarks shall apply to this class alone.

The basis of this paper is the report of a case that occurred in my own practice last fall, and which I consider a very interesting one with regard to cause, symptoms, and course.

Mrs. ——, æt. 26, American, small in stature, well formed, was at the end of the eighth month of pregnancy. The progress of gestation up to that period was without an untoward symptom, and indeed, the patient enjoyed better health during that time than ever before. Previous to this period of pregnancy, she was under my professional care for about a year, for treatment of ulcers of the rectum, rectal abscesses and retroflexion of the uterus. There also existed old pelvic cellulitic deposits posterior and to the left of the womb, which made the repeated manipulations (necessary for the replacement of the body of the womb) exceedingly painful at the time. She had had one miscarriage, which occurred about a year or so before she came under my care. She, as well as her husband, is inclined to date the uterine displacement from the time of said miscarriage; and further, it seems that the physician who then attended her discovered some abnormal features at the time from which, as he predicted to the husband, his wife "would have any amount of trouble in the future."

During my last visit for the purpose of replacing the womb, I found the introduction of the sound impossible, and all efforts at reposition had to be abandoned, owing to an increased tenderness that portended an attack of cellulitis. For quite a period following this last attempt, the treatment consisted merely of frequent and copious hot water vaginal irrigations, while rest and a light nutritious diet only were prescribed. From this time forward there was a steady improvement in her condition.

Some time in February, 1885, she became pregnant. During the period of gestation she made a ten weeks' trip through the West, and returned in apparently better health that she had enjoyed for years. At the end of the eighth (calendar) month she was delivered of a well-formed, healthy female child. The immediate cause of her premature confinement may be surmised from subsequent events.

On October 27 she had been up and about as usual, and in the evening went with her husband to an entertainment. On her return, although quite well, she began to feel steady, bearing-down pain, which continued to increase slowly but persistently. I was called to her bedside about 2 A.M. October 28. With the symptoms just described and the knowledge of advanced pregnancy, I suspected that labor had set in. Examination readily revealed that the womb was pushing into the true pelvis; the cervix was still closed and of considerable thickness, but flabby, and readily admitted the point of the index finger.

What was to be done to prevent premature labor? Give ergot to cause contraction of the os? I decided, no. If labor should proceed notwithstanding, unpleasant complications might be the consequence. So I determined to do, what I had often done successfully before, namely, to give small but often repeated doses of codia and chloral hydrate. The former for the relief of pain, the latter to produce sleep. The following prescription was given:

℞ Chlor. hydrate..... ℥ i
Codiæ sulph..... gr. i
Syr. simple.....
Aquæ menth. pip.....aa ℥ iss

M.S.—Two teaspoonfuls in half tumblerful of water every hour until relieved.

Two hours later I was again summoned, and on my arrival, upon investigation found the os dilated to the extent of a silver dollar; membranes intact, pains natural and occurring every three or four minutes. Child in the first vertex position, and living. Labor progressed favorably until about nine o'clock the same morning, when she was safely delivered, without an accident either to herself or child. The only aid rendered was:

The rupturing of the membranes when the os was fully dilated; the administering of chloroform during the expulsive pains; the tying and severing of the cord; the delivering of the placenta (which followed spontaneously, and almost immediately after cord was severed); the washing of the external genitalia; the applying of moderately tight bandage, and in rendering the patient comfortable in bed.

In all respects the labor was a most natural (though premature) one. Having assured myself that the nurse in attendance fully understood the manner and comprehended the importance of keeping the patient and the bed clean, I left, to return the same evening.

At 6 P.M. of the first day, October 28, patient had rested well and felt first rate, only complaining of slight after-pains.

October 29.—She had a good night; passed urine freely; was without pain; lochia natural in quantity and quality; after-pains not annoying; the patient in a cheerful frame of mind.

October 30, 9 A.M.—Stated that she felt well; was almost free from after-pains; lochia free and inoffensive. Temperature 98.5°. Pulse 90. At 7 P.M. I was informed that she had a chill lasting one hour (4 to 5 P.M.) T. 106°, P. 130; no pain worthy of mention anywhere; abdomen soft and not particularly tender, being sensitive only to deep pressure over uterine body; lochia free and inoffensive as before. Ordered 15 grs. of quinia and ¼ gr. of bimeconate of morphia. Nine P.M. she had another chill lasting half an hour. T. 107.5°, P. 150. She complained of pain in left inguinal region, which was sensitive to palpation; per vaginam a slight swelling and doughiness was detected with difficulty. An additional dose of 22½ grs. of quinia was given, and Prof. Palmer was requested to see her in consultation. His thermometer agreed with mine (107.5°), but he was unable to count the pulse. He gave it as his opinion that the chill and fever were septic in origin, probably there was something within the uterus; advised continuance of quinine in large doses, also hot water antiseptic injections, and if temperature did not quickly fall from these means, to wash out the uterus.

From the fact that the patient had passed through a perfectly normal labor and without injury to her-

self, and because the lochia was not suppressed and still inoffensive, and because she was in such extreme physical and mental misery, I demurred against uterine irrigation. I felt sure the trouble was not within the uterine cavity, for never did I see the secundines follow so perfectly and easy as here. We however concluded to await the results of the quinia and the vaginal injections previously administered; and determined that should the temperature not yield to the remedies employed, uterine irrigations were to be made; until then, 10 gr. doses of quinia were to be given every four hours to prevent a return of the chills, and to reduce, if possible, and to keep down the temperature.

October 31, A.M., T. 101.5°, P. 126. No pain, slept most of the time. 7 A.M., T. 103.5°, P. 116. 8 P.M., no pain, T. 104.7°, P. 102. Quinia 10 gr. continued every four hours. Lochia free and inoffensive as usual; copious carbolized injections of hot water repeated every four hours.

November 1, 8 A.M., T. 101°, P. 95. Bowels acted twice spontaneously. No pain, lochia uninterrupted and natural; abdomen tender to deep pressure only. Her breakfast consisted of a few sups of coffee and small portion of graham meal. Dinner of chicken-broth and milk toast. At 8 P.M., T. 101°, P. 78. Quinia was discontinued.

November 2, 8 A.M., T. 103°, P. 88. Diet during preceding twelve hours, two egg-nogs and a glass of lemonade with ½ oz. of brandy. During the day she called for and received a piece of tenderloin, a roll, a piece of bread, and one and one-half cups of coffee. There was still slight tenderness in the hypogastric region on gentle pressure and when she moved. Lochia diminished, lighter in color and free from odor. Expressed herself as feeling better. Digital examination revealed slight swelling and tenderness to the left and front of the uterus. Patient being averse to quinia, I ordered 2 gtts. of the tr. verat. vir. in two teaspoonfuls of brandy to be given every hour; continued the application of warm cloths over abdomen, and copious, carbolized warm water injections. 8 P.M., T. 105°, P. 83. Skin hot but moist. Felt no pain. Lochia almost white in color but normal in quantity and not offensive. Patient, much against her will, took another 10 gr. of quinia and the tr. verat. vir. with brandy was also administered during that night. At 10 P.M., T. 104.5°, P. 110. Although I was certain that the cause of the high temperature was not within the uterine cavity, as first suggested by Prof. Palmer, and in order to protect myself and satisfy the friends of the patient, I washed out the uterine cavity with the use of a reflux uterine catheter, with warm carbolized water. This was followed by some pain, but there was no decline in the temperature, neither was there a removal of anything that might be suggestive of trouble in that organ. This was done but once.

November 3, 8:30 A.M., T. 101.4°, P. 90. Patient slept during the night. Abdomen soft, tender only on deep pressure; had a natural stool. During the day she received, at proper intervals, a little coffee with toast and part of a baked apple. At 2 P.M., she complained of a slight chilly sensation. T. 104.2°, P. 100. Absolutely refusing to take any more quinine, administered only the warm applications, the tr. verat. vir. (gtts. 2) every hour, and hot carbolized injections were continued. At 9 P.M., T. 104.2°, P. 108. A free, loose, but somewhat painful movement of the bowels at 8 P.M., one at 2, and another at 4 A.M. in the morning.

November 4, 8 A.M., T. 103.2°, P. 116. Patient had a restless night. Phys. exam. revealed a movable and painless uterus; the swelling and tenderness in the left inguinal region hardly noticeable. Continued the poulticing and to aid her digestion, to the want of which I attributed the diarrhœa, gtts. 5 of diluted hydrochloric acid after eating. At 5:30 P.M., T. 105°, P. 110. Her food during the day consisted of ½ glass of egg-nog and an equal amount of Hof's Malt Extract. At 10 and 7 P.M. she had several watery stools of brown color, each preceded by griping pains. To stop both pain and stools I gave ⅙ gr. of morph. sulph. hypodermically, for the fever 30 gr. of salicylate of soda. At 9 P.M., T. fell to 100.2°, P. 104, and she expressed herself as feeling much better.

November 5. Patient slept well during the night, had had no stool since last visit, and had partaken liberally of egg-nog, milk and malt, when awake. 8 A.M., T. 103.2°, P. 115, another 30 gr. dose of salicylate of soda. Breakfast consisted of ½ cup of coffee, a small bit of tenderloin, milk toast, and baked potato. Had a good day; no pain. Injections and hot external applications continued. Lochia had ceased, the water being returned from vagina almost as clear as before being used. 7:30 P.M., T. 103.6°, P. 124. Salicylate of soda gr. 30.

November 6. Patient passed the night fairly. 9 A.M., T. 103.4,° P. 118. Appetite not so good as day before, therefore stopped the use of salicylate of soda. Abdomen flat and soft, painful to deep pressure over hypogastric region; local condition about the same as at the last examination. Diet consisted only of milk, egg-nog and Hof's malt. 8 P.M., T. 104.8°, P. 150. Took again 30 gr. of salicylate of soda, which reduced temperature to 102.2°, P. 118 in one hour and a half.

Comparing the local manifestations with the range of temperature and pulse, I became daily more convinced that the malady was not of a local character. Of course there were physical signs of pelvic cellulitis, but they were not present in the beginning, nor did they ever assume a serious nature. Indeed, the cellulitic condition diminished while the temperature and pulse continued high, having a distinct morning remission and evening exacerbation. From the first I held and never could free myself from the thought, that some element other than septicæmia, through the parturient canal, was the active agent in the production of the disease; that possibly, nay probably, the body had been invaded sometime prior to her confinement and that labor simply precipitated its onslaught on the system.

What could it be? Was it typhoid or remittent fever? If the former, it lacked the characteristic diarrhœa, rose-spots and stupor, although the patient slumbered more during the later stage of illness

than before. This I attributed, however, to the repeated doses of salicylate of soda; neither were the early symptoms of the disease like those of typhoid, though at this time I was informed by the husband, that about a month prior to her confinement the patient had complained of languor and chilliness, for which, several times she requested some quinine, but received none. Was it then remittent? In all probability. Had all the symptoms described (with the exception of those within the pelvis) occurred previous or after the lying-in period, it would have been diagnosticated as such, by any physician who has had the opportunity of observing this affection, as it occurs in this part of the country. But the consultant had not fully concured with me in my view of the case. He admitted that there might be some malarial complication, but that the main cause was sepsis.

On the morning of the 13th of November, the seventeenth day after confinement, temperature had fallen to 99.5°, P. 105. Digital examination revealed nothing new, only that the swelling and pain were less than when last examined. But the same evening, the temperature rose again to 104.8.°

The next day, November 14, it was 101.4°, P. 115, and still rising. I felt that something must be done to control this ever recurring high temperature. Another consultation with Prof. Palmer was held. He again examined the patient and gave it as his opinion that the trouble was principally of local origin, and the result of sepsis with an intercurrent cellulitis, and that, probably there was some malarial complication. He strongly urged resort to quinine, and if the patient refused to take it, to give the bisulphate clandestinely per rectum; he also advised externally tr. of iodine, to continue the hot water vaginal irrigations, and to observe a light nutritious diet.

Returning in the evening I learned that the patient had refused to receive the injection as well as the external applications of iodine. Under the circumstances I concluded to retire from the case, and left with the request to send for another physician.

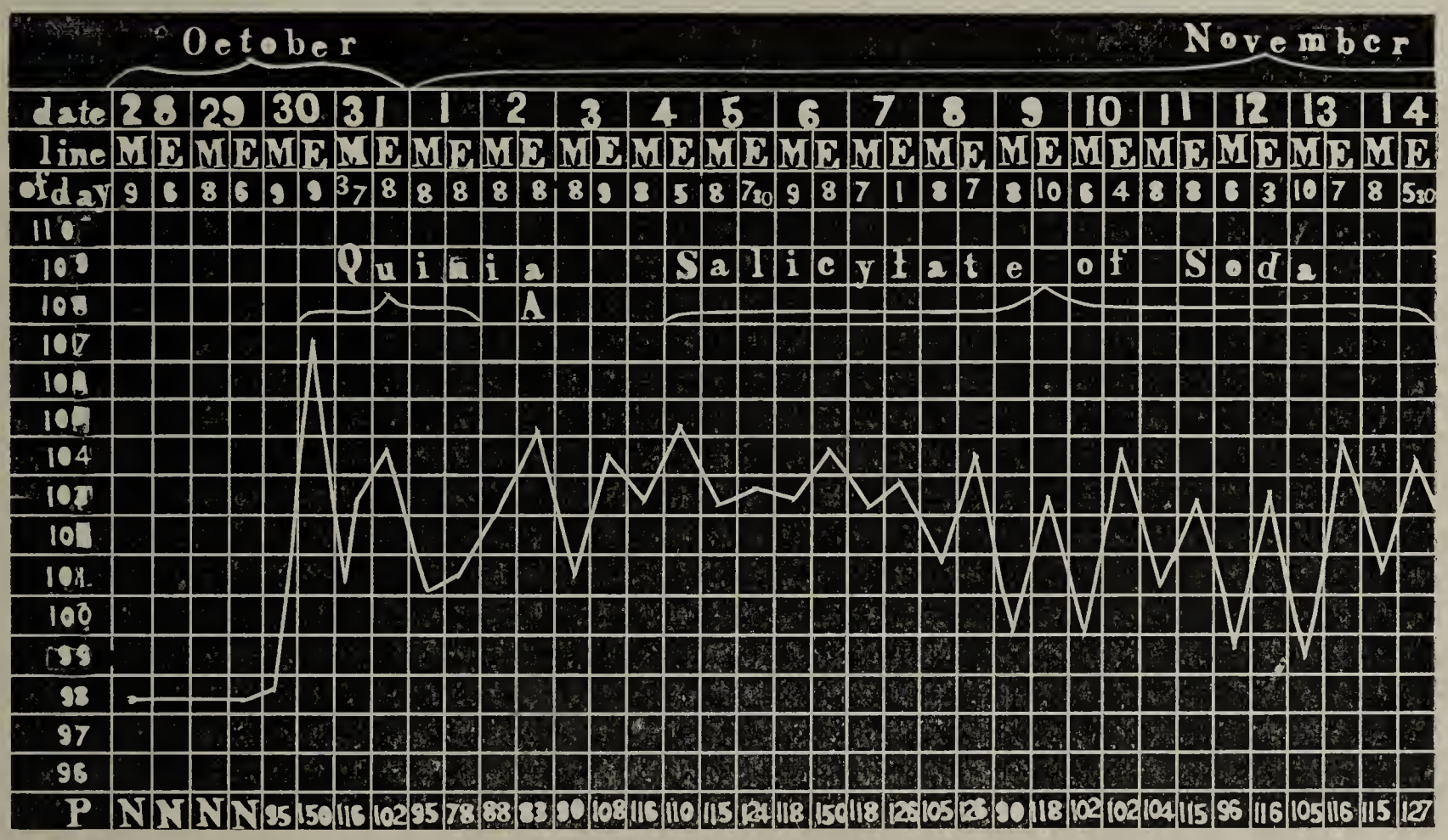
During the eleven days following my last visit, the temperature and pulse only were recorded by the husband. The first six days the patient was without a medical attendant, and then another physician was called in. Although I had requested the husband to see that a record be kept throughout her illness, it was not done. She continued to be sick for some time, the patient dining for the first time thereafter, at the table on Christmas day. Duration of disease: Two months.

The questions that present themselves for consideration are:

1. Was this a case of puerperal septicæmia, remittent fever, or something else?

2. Whatever it was could it have been avoided by the early use of antiseptic vaginal injections?

3. To what extent is the use of antiseptics, scientifically and practically, justified or necessary?



less than when last examined. But the same evening, the temperature rose again to 104.8.°

The next day, November 14, it was 101.4°, P. 115, and still rising. I felt that something must be done to control this ever recurring high temperature. Another consultation with Prof. Palmer was held. He again examined the patient and gave it as his opinion that the trouble was principally of local origin, and the result of sepsis with an intercurrent cellulitis, and that, probably there was some malarial complication. He strongly urged resort to quinine, and if the patient refused to take it, to give the bisulphate clandestinely per rectum; he also advised externally tr. of iodine, to continue the hot water vaginal irrigations, and to observe a light nutritious diet.

In my opinion it was not a case of septicæmia in which the poison entered the system through the parturient canal. Those who have followed carefully the report of this case will bear me out in this statement. If the disease was of septic origin at all, the point of production and its entrance into the system was not in this avenue, but was rather to be found within the old cellulitic remnants in the parametrium, or the attenuation and tearing of a still existing rectal ulcer, or, possibly, to a hearth of incapsulated dried-up pus within the perineal body or around the rectum, the result of anal fissures and rectal abscesses, from all of which the patient had suffered not only during gestation, but for quite a time previous to that period. But from the course the fever took, and from the fact

that the temperature receded invariably after the administration of quinine, I was inclined to believe that it was malarial in character; and this view was further sustained by a knowledge of the fact that, during her pregnancy, the patient made a long trip through the West, sleeping many times upon the ground without shelter. Besides, there were positive malarial manifestations in the case a month prior to confinement.

If we are to accept that a continued fever, occurring, no matter from what cause, during the lying-in period, is invariably to be denominated, puerperal fever; then of course all further discussion is unnecessary. But it seems to me, that puerperal fever *per se*, should admit of and embrace no disease other than one that can only occur during the puerperal state, proper. At present, however, it may mean septicæmia, erysipelas, measles, diphtheria, malaria, indeed any acute disease that may find its way into the system, and manifest itself during the lying-in period and being masked by it. Since it has been satisfactorily proved to most modern writers and teachers, (and practical experience only serves to encourage this view) that some, if not all acute infectious diseases may be productive of puerperal fever so-called, it behooves us to differentiate well before we pass judgment upon what has caused its occurrence in each particular case. In this instance after a careful examination into the history of the patient, and the cause of the disease, it is my opinion that nothing but a clear case of intermittent fever can be made out of it; the pelvic pain and swelling by it, and, possibly, the previous existence of pelvic cellulitis. At times it may, and in this case it did, become a serious question whether or not, the appearance of this unpleasant complication could not have been avoided by certain so-called precautionary measures. If, for instance, a case of puerperal fever occurs in consequence of septic absorption through an injured parturient tract, as for example a lacerated cervix, vaginal vault, or perineum (be it in consequence of a natural or artificial labor), or that portions of the placenta, or of the membranes were left behind, the physician in attendance might, in a measure, be held responsible if he failed to employ antiseptic washes. This, too, would hold good in cases where there is a suspicion of gonorrhœa by the presence of an ambiguous discharge prior to delivery.

I am well satisfied that all those cases of puerperal fever, which find their inception in an external cause through the obstetric-channel, may, to some extent, be successfully mitigated or prevented by the early and frequent use of vaginal antiseptic injections. On the other hand, however, diseases like scarlatina, measles, diphtheria, etc., which find their way into the system through other avenues, and which perhaps have existed within, prior to labor, may be precipitated by the event, and thus, suddenly make their appearance in the form of so-called puerperal fever where it was least expected.

The practitioner thus surprised, may not, in the beginning, recognize the true origin of the trouble. His first thought will be that the genital organs are the seat of the difficulty. He will, in all probability, be led to believe that there alone is the cause, and, indeed, his suspicion may become strengthened by the presence of pain and the swelling in and around the uterus and the vagina. He may forget, too, for the moment, that in all cases in which puerperal fever is due to the presence of a malarial or an erysipelatous, or a scarlatinal poison, the symptoms may be like those caused by septic abortion through the parturient canal. This certainly demonstrates that, while there is hardly any doubt that the seeds of any of the infectious diseases find the puerperal patient a fruitful soil for their multiplication and reproduction, we are not always able to trace them to their true origin. In the case just reported, I feel justified in the belief that nothing could have been done at the time of confinement or immediately following, that would have averted the attack. I firmly believe in the preventive value of antiseptics, but to a certain extent only. Antisepsis in normal cases of labor need and ought not mean anything except:

1. Ordinary cleanliness throughout and in every respect.

2. The avoidance of frequent examinations and unnecessary aids; needless exposure in supporting the perineum (which, after all, is a doubtful procedure), as well as during the tying of the cord, the delivering of the placenta and process of washing after completion of labor.

To wash out the vagina (to say nothing of the uterus) immediately after normal labor, is, in my opinion, meddlesome midwifery, and ought to be pronounced as such. It does not benefit the patient, it prevents nothing, and may do harm. In prolonged or in instrumental delivery, in cases where the whole hand must be introduced or otherwise injuries of a serious nature sustained, vaginal injections are always, but uterine injections rarely, indicated, because the conditions are different from those in which labor proceeded normally. In the former, we deal with open, raw and sometimes gangrenous surfaces, and have a patient more or less exhausted. In the latter, nothing, except that the patient has suffered a great deal of pain, which was perhaps even mitigated by the use of chloroform. There are no broken surfaces, indeed, nothing but what ought to be there. What do you think of putting pledgets of absorbent cotton steeped in a carbolized or other antiseptic solution, into the vulva, and the placing of an antiseptic cloth over the vulva, as a means of prophylaxis? It is my honest conviction that such practice as this is not the fruit of practical experience, nor was it invented by necessity. To-day, when one new measure or remedy succeeds another, when so many are ever ready to announce something new (?) and, being announced, as many, if not more, are ready to improve and add to the new discovery, the perplexity in which the practitioner is placed at times in consequence, is occasionally not only annoying to himself, but it casts a shadow upon the profession at large.

My limited time does not permit me to speak *in extenso* of the ill-effects of vaginal irrigations that have occurred after natural labor. Therefore in brief, only a few references:

Dr. John Cleveland[1] reported a case to the Cincinnati Obstetrical Society, in which death occurred twenty-four hours after the use of a vaginal warm water injection. This patient was apparently doing well, and the injection was employed simply from a sense of duty on the part of the doctor. Almost immediately after the injection was made a severe pain supervened, and could not be subdued even by repeated injections of morphia. The abdomen became tympanitic, the temperature rose until it was 104 in the evening and 108 the next morning. The patient died, notwithstanding all the efforts that were made to save her life.

Dr. G. Frank Lydston[2] read an interesting paper May 5, 1884, before the Chicago Medical Society, on "Puerperal Septicæmia and the Prophylaxis of Puerperal Inflammations," in which he cites and reviews the records of the Charity and Maternity Hospitals of New York. "After comparing the different modes of treatment and their results, he clearly demonstrates that the mortality rate, as caused by septicæmia, is more than one-half less when vaginal injections were not allowed than when they were employed. Later on he states that he has seen the temperature rise and pelvic inflammation follow the use of frequent vaginal injections; and cases which may eventuate in puerperal septicæmia or lead to fatal issue would often do well and make perfect recovery if left alone, kept free and quiet from curious visitors. As for prophylactic intra uterine injections, he further says, the man who uses them will sooner or later come to grief in making too general use of this procedure. In speaking of his experience in the New York city hospitals, where the non-interference plan was practiced in obstetrics, the death-rate from septicæmia was at a minimum. Subsequently 'reform' was introduced in the way of prophylaxis and complicated manipulations, with the 'direct and immediate effect' of increasing the mortality rate, which became alarmingly high. Simultaneously, upon Ward's Island, there were present a large number of Russian-Jewish refugees who were physically filthy and mentally despondent. Upward of ninety of these women were delivered without death. There were numerous forceps deliveries, but there was absolute non-interference in the after-treatment. Here was a good opportunity to compare fancy mid-wifery results with the let-alone method."

Dr. J. K. Bartlett,[3] in his admirable annual report of 1883, when Chairman of this Section, in speaking of antisepsis in private obstetrical practice, says: "None of these prophylactic measures seem necessary in cases of uncomplicated labor, and some of them are absolutely dangerous. Intra-uterine injections are especially so regarded, and the use of carbolic acid solution into the vagina have not always been harmless."

I admit that many times the fault may lie with the individual who makes these injections. But this charge should not be made general, for surely it does not require a very high degree of education and skillfulness to carry them out properly. Therefore the charge (made by those who apply antiseptic injections in every case) that the trouble, arising in certain cases, is due to this cause alone, is certainly not tenable and seems to be a poor excuse. The ground which I am taking is sufficiently supported by high medical authority, and justifies the conclusion at which I have arrived.

In conclusion, I wish to state that out of nearly 400 labor cases attended by me, the one just submitted to your consideration is the first that would come under the term, puerperal fever (if such it shall prove to be in your opinion). I have seen a number of cases of puerperal septicæmia, but none of them were under my care as physician in charge during labor. They occurred principally in the hands of midwives, and in a few cases in which I was called in consultation. In the early part of my professional life I invariably used antiseptic injections whenever I had the time to make them myself. My practice called me largely among the poorer class of people, who could not pay for a syringe or drugs, and, occasionally, even when able to supply these they obstinately refused to go to the expense. Speaking from experience and with a typical kind of good sense, they declared that "it was all nonsense, they had never heard of such a thing before." To my surprise all these cases, though frequently abnormal and complicated in character, did well, and, I must confess, some even better than those in which antisepsis was rigidly carried out.

Notwithstanding, according to precept, I insisted upon vaginal injections whenever and wherever it was possible. Suddenly, about three years ago, I observed for the first time the ill-effect from the use of a fountain syringe. Half an hour after the injection, though not the first one nor immediately after the termination of labor, pain supervened—and such pain! Whoever has seen a case of uterine colic will know what that means. One grain of morph. sulph. subcutaneously was necessary to subdue this patient's agony. In the course of the same year I had two other similar experiences. The last occurred in a case in which I took particular care that all should be done properly. Everything progressed favorably; the first injections were used on the fourth day after labor. The ill-effects followed as quickly as related in the first case, but the suffering was much more intense. The patient moaned piteously and with her hands firmly pressed upon the abdomen, she reeled from side to side, crying and begging for help in the most heart-rending tones.

Now, since we have as a result of carefully employed antiseptic injections such scenes of suffering and even fatal results, is it not uncalled for and wholly unjustifiable to resort to them in normal cases of labor?

---

[1] Cincinnati Obst. Gaz., vol. 8, p. 583.
[2] Jour. Am. Med. Ass'n, 1884.
[3] Jour. Am. Med. Ass'n, 1883.

ON TRACHOMA.[1]

BY ADOLF ALT, M.D.,
OF ST. LOUIS.

This paper will not startle you by many new points, as it seems to me that at every such a gathering of men working in the same branch of the healing art, we should exchange our experiences in the healing of the more common affections, and that our time is better spent in such discussions than in relating some very interesting but rare cases.

Let us first recapitulate some of the histological points of the normal and trachomatous conjunctiva. The normal human conjunctiva is made up of typical adenoid tissue (and especially so in the part which is called the fornix), and of a fibrous and an epithelial layer. The surface of the conjunctiva shows numerous minute folds, elevations and indentations. The adenoid tissue and these folds (according to Rælhmann) are formed in the second and, respectively, fifth month after birth. The adenoid tissue does not contain any lymph-follicles, although this has been asserted by some authors. Yet it is full of larper lymphatic spaces and blood-vessels.

The following is the condition of the trachomatous conjunctiva, as I have studied it on numerous pieces taken from the living subject: The adenoid tissue is thickly crowded with lymphatic cells. This cell infiltration is, however, unequal in density, and here and there in every microscopical section we find places where the cells are aggregated in larger numbers; this is what has been called the trachoma follicle. The trachoma follicle, then, is a roundish, oval or pear-shaped aggregation of lymphatic cells—a lymphoma, as we find it in other mucous membranes and in glandular tissues, as the liver, the kidneys, etc., in the shape of miliary lymphomata. The cells seem to be more numerous and more closely pressed together at the periphery of the follicle, and they are less densely packed in the central portions. The follicle has no connective tissue coat of its own, and is therefore not analogous to the lymph-follicles of the intestinal tract, but in its growth it presses the fibres of the conjunctival tissue aside, and the thus condensed conjunctival tissue has been mistaken for the coat of the follicle. In the central portions of the follicle we may sometimes see a net-work of thin, pale fibres, and the cells in these portions are often apparently larger than the more densely packed peripheral ones. Even in the peripheral portions a small amount of intercellular substance may be detected in very thin sections. It has been stated that the peripheral cells of the follicle are gradually transformed into spindle-cells and fibres, and that in this manner a continuous membrane enclosing the follicle might be formed. I cannot deny the possibility of such an occurrence, yet have failed thus far to see it in my specimens. Finally, the cells of the follicle may undergo a regressive metamorphosis, so that instead of the follicle we find a grumous mass of detritus, or they may be transformed into connective tissue, or be absorbed. The follicle is often found to contain blood-vessels; sometimes they are wanting. Enlarged lymphatic canals are usually found in its neighborhood. The pressure of the follicle may cause the epithelial layer which covers it to undergo a fatty metamorphosis and to be cast off. In this manner a superficial ulceration may result, and then the contents of the follicle can easily and spontaneously be evacuated. In the process of healing of these ulcerations sometimes polypes, and usually small scars, are formed. The follicles, furthermore, may be so numerous as to press each other, and several of them may thus sometimes be found to have merged into one.

During the progress of this disease the adenoid tissue of the conjunctiva gradually loses its function and is destroyed. In microscopical sections of trachomatous conjunctiva epithelial formations are frequently seen in the depth of the tissue. These have been described as true glands newly formed within the conjunctiva, and their formation has been considered a characteristic symptom of trachoma. It seems, however, to be established beyond a doubt that we have not to deal with new-formed glands, but simply with the epithelial coat of the numerous indentations found even in the normal conjunctiva, the cells of which are perhaps stimulated to hypertrophy by the inflammatory process, and are displaced by the irregular swelling and infiltration of this membrane during the progress of the trachoma.

I may state here that the histological conditions are the same in cases of solitary follicles, in follicular catarrh, and in trachoma, *κατ' ἐξοχήν*, although differing in degree. As you know, Sattler, then of Giessen, had thought he had found the micro-organism to which the disease under consideration is due, yet he acknowledged later on that he had been mistaken, and the peccant coccus may, perhaps, yet be detected.

I do not wish to go any further into detailing all the mischief which may be done by this disease to the cornea and the lids (since these things are too well known), nor into the question of the ætiology of trachoma. From the histological conditions in this affection, what would be the rational treatment? Theoretically it would appear, that to adopt nature's own course in the healing would be the best method; that is, we should either bring about the *absorption* or the *evacuation* of the trachoma follicles.

Absorption of the follicles may undoubtedly be brought about by a stimulating treatment. To this are due the unquestionably excellent results of a careful and prolonged treatment with sulphate of copper, the yellow or red oxide of mercury, or similarly acting substances. The treatment with such substances, applied with a view to *stimulate*, *not* to *cauterize*, will assuredly, as far as the trachoma of the conjunctiva is concerned, give the best possible results, and it may lead to a perfect *restitutio ad integrum*, when the disease has not as yet led to more serious secondary affections. It would, therefore, seem that in all cases in which no secondary changes have as yet taken place, the application of the remedies just named would be the best method of treatment. Empirically this has been found to be so, and this method

[1] Read in the Section of Ophthalmology, Otology and Laryngology, at the Thirty-seventh Annual Meeting of the American Medical Association.

is to this day the most generally used method in the treatment of trachoma. To shorten the process of healing which, as we know only too well, is still a very tedious and prolonged one, I have of late practiced excision of the most prominent portion of the conjunctiva, and I must say with a very happy result. The pieces which I removed are not very large, and the resulting scar is hardly visible. Yet the duration of the healing process has in all cases been very materially shortened, and no harm has been done to the patient. No doubt the bleeding, and later on the formation of the scar, act beneficially on the remaining tissue. The results which I have seen are such that I have adopted this partial excision as a method for the future, and can earnestly recommend it.

If the case be so far progressed that it is no longer to be hoped that we can bring about the absorption of the follicles, or if the secondary changes are such that in order to save the function of the eye, etc., the trachoma must rapidly be got rid of, what would then be the most rational method? Surely, again, what we have found to be nature's own, namely, the evacuation of the follicles. This is accomplished by different methods. There are several quacks in this city who cure the eyes which the best oculists have been "fooling with" for many months, and even years, as the people say, and what is their method? They apply a very strong caustic (nitrate of silver), paste, and thus cause the sloughing off of the whole surface of the conjunctiva, giving the contents of the follicles a chance to escape all at once. If this procedure did not endanger the function of the eye more even than the disease itself, it would be beautiful. Yet, in our Poor-House you can see the bad results, if you cannot see them elsewhere. Scientific men will not resort to such measures, and, if they do, they will at least guard the eye as such against all harm, if that can possibly be accomplished.

Another and decidedly better method for evacuating the trachoma follicles is to prick each and every visible follicle with a needle or knife, and to squeeze out its contents, and this may be modified by applying a strong caustic (say chromic acid) to the interior of the follicle. Both procedures seem to be good, yet the numerous scars which must inevitably result from such numerous, if ever so minute, injuries are, it seems to me, of decided weight in the balance against them.

A short time ago the excision of the whole of the fornix has been highly recommended, and this method has then by others been amended in such a way as to remove the whole of the tarsal conjunctiva and the tarsal tissue. If the excision of the fornix is complete, the conjunctival sac must become more shortened than is even sometimes done by the disease itself, and the originator of this method (Schneller) states himself that some of his patients could not open their eyes as well as before. On theoretical grounds, then, I should think we might not only expect good, but also very disagreeable results from such an evacuation in bulk of the adenoid tissue of the conjunctiva. The method of excising the palpebral conjunctiva and the tarsal tissue, I think, does not need any consideration, as long as there are better methods.

There has been a good deal of theorizing done with regard to the good effects which have been empirically found to result from the inoculation of blennorrhœal discharge, and, in more recent times, to the good effects of the application of jequirity in trachoma. As you know, Sattler, who invented the trachoma coccus, explained the effect of jequirity by the action of a jequirity bacillus, also of his own invention, who actually was to eat up the trachoma parasite. The beneficial action of these two agents, pus and jequirity, in trachoma seems, however, to be due: *first*, to the alterative effect which the violent inflammation, caused by both agents, must have on the tissues affected; *secondly*, to the constriction to which the follicles are undoubtedly subjected during this violent inflammation; and *thirdly*, to the fact that the epithelial covering is, during this inflammation, destroyed, cast off, and the contents of the follicles are thus spontaneously evacuated. It is to be pitied that both agents have rather bad effects on the eye-ball, otherwise their usefulness would be very much greater. I have never made use of the inoculation with blennorrhœal pus, and should not do so now, since we have jequirity. The latter I use, in the form of dry powder, dusted on to the places where I want it more especially to act. I am satisfied that, cautiously applied in this manner, its action is less violent and less dangerous than it is with the infusion.

Without trying to praise a remedy simply because it is new, and without being very enthusiastic concerning it, I may further state here that in the later stages of the trachomatous process iodol seems to act quite nicely. I have used it in the shape of an ointment with cosmoline and lanoline.

MEDICAL PROGRESS.

Some Hypnotics.—Dr. S. G. Webber, of Boston, says: Several drugs have been lately given to the profession with the claim that they are valuable hypnotics. I have had an opportunity of testing these in the cases of many patients in the Adams' Nervine Asylum.

Paraldehyde has been some years in use. It has advantages over chloral. The immediate subsequent effects are less unpleasant. It very rarely causes headache on the next day; sometimes patients have a sensation of fullness or pressure in the head for a few hours after waking. I gave it in one case where the patient had been taking chloral in large doses, not measuring the dose, and had been injuriously affected by the drug. The paraldehyde gave, in this instance, better and more prolonged rest; the patient partially recovered his mental powers and some measure of strength. The paraldehyde was continued several weeks in nightly doses of 40 minims. In this patient there was probably disseminated sclerosis, and it did not seem possible to do without some agent to produce sleep, at least so long as he was at home. The chief objection to paraldehyde is

its disagreeable odor and taste, and also the odor it imparts to the breath. I do not remember to have met any unpleasant symptoms arising from its use; but had never seen a case in which it has been used habitually for a long time. The dose is from 45 to 80 or 90 minims; 60 minims is the average dose. Occasionally a dose of 80 minims has failed to give the sleep which I have desired to obtain.

Urethan came into notice later than paraldehyde; it is much more pleasant to administer, having scarcely any taste or odor. When I first gave it the dose was too small, but by increasing it to 30 grains good results were generally obtained. Sometimes much larger doses are necessary. It is quite soluble; 15 grains will dissolve in 1 drachm of water. The after effects are generally unimportant. It has seemed once or twice to give rise to nausea the day after; but often the patient says the sleep has been very natural and refreshing. It is not so sure to produce sleep as paraldehyde.

Hydrobromate of hyoscin has the advantage of being almost tasteless; and the dose is small. I began with a dose of one hundred and twentieth of a grain, as recommended by the articles I had read; but soon found this too small, and increased to a sixtieth of a grain, using the following formula, giving 20 minims:

℞. Hydrobromate hyoscin ..... gr. i.
Alcohol ..... ℥iss.
M. Aquæ g. s. ut fl. ..... ℥xx.

In a few instances I have given 25 minims of this mixture. There is so little taste to this that it can be given in some simple drink, as gruel or beef tea, without the knowledge of the patient.

In one patient it produced discomfort in the head the next day, so that after two trials it was given up and urethran given instead. In other cases the sixtieth of a grain given for a week or more has produced no bad effects. In a few cases it has failed to produce sleep, and the sleep secured in other cases has not been of so long duration as that usually produced by paraldehyde, but subsequently in these same cases the latter drug has not proved more efficacious. On the whole, my experience with this drug is that it will act favorably with a large number of patients, that it is acceptable on account of its lack of taste and odor, and because of its small dose; the sleep obtained is very refreshing and natural; it is, however, rather more likely to leave unpleasant effects, and seems to loose its power by repetition sooner than either urethan or paraldehyde.

Hypnone has a strong odor of bitter almonds. One patient spoke of it as having "all the odors of Araby the blest." I have given it in capsules in dose of 5 to 8 drops (.07 to .13) or even more, the former dose is rather small for good results. It will produce very natural sleep, and the patient awakes refreshed. It is of much less value than the drugs already considered, and fails more frequently than the others in producing sleep. It may be conveniently substituted for the others when they have been taken some time consecutively.—*Boston Medical and Surgical Journal*, October 14, 1886.

SUBCUTANEOUS INJECTION OF SALT SOLUTION.—DR. ALBERT H. TUTTLE writes as follows from Vienna: I lately witnessed the subcutaneous injection of 50 ccm. of a salt solution into the body of a boy 7 years old, by Professor Monti, and believing it may be of interest to your readers and perhaps at some time useful, I send you this brief description of his method. The requisites are a piece of rubber tubing about six feet long, a large hypodermic needle and a graduated beaker containing a solution of salt. The salt solution is heated to 100 F., and then placed about four feet above the patient on a stool that rests on the top of a table. The hypodermic needle is attached to one end of the rubber tubing. The tubing is filled with water, and one end is inserted into the salt solution, then the needle end of the tube is lowered and the contents are allowed to run off until the stream becomes warm from the salt solution in the beaker. The needle is now inserted into the subcutaneous tissue while the stream is flowing. At this moment an assistant reads the level of the fluid in the beaker. This done, one can tell exactly by means of the scale on the beaker how much of the solution has been injected. The tissue is distended by the fluid forming a tumor which disappears in the course of an hour or two. In the case I saw the injection was made an inch and a half below the naval, and a half inch to the right of the median line. The swelling was an inch and a half in diameter and about half an inch in height. The whole time occupied in giving the injection and making the necessary preparations did not exceed twenty minutes. The method has been employed in the collapse of cholera infantum, and may further be found useful in some of those cases where intravenous injection has formerly been resorted to.—*Boston Medical and Surgical Journal*, October 14, 1886.

LATE OCULAR SYMPTOMS OF SYPHILIS AND THEIR TREATMENT.—ABADIE (*Annales d'oculist.*, May–June, 1886), again urges the advantages of his method of subcutaneous injections of mercuric bichloride in the late ocular lesions of acquired syphilis and constitutional syphilis. These lesions are characterized by their complex nature and the slowness of their evolution. Chorio-retinitis is frequently accompanied by chronic iritis, and even by parenchymatous keratitis. Many of these cases heal spontaneously without treatment, while others show a very disquieting tenacity, which resists all treatment until the hypodermic mercurial injections are employed. This latter method of treatment gives good results also in certain forms of chorio-retinitis limited to the region of the macula. In cases of isolated paralyses of the cranial nerves or twigs of nerves, without cerebral complications, the extreme rebelliousness of the trouble is successfully conquered by the hypodermic method of treatment. For this purpose Abadie employs a solution of mercuric bichloride, 1 part; sodium chloride, 2 parts; and distilled water, 100 parts. He injects on alternate days. 20 drops of the solution beneath the skin of the back, and makes gentle massage over the spot afterward.—*New York Medical Journal*, October 23, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, NOVEMBER 13, 1886.

CASTRATION IN NERVOUS AND MENTAL DISEASES.

Such is the title of a symposium, in the October number of the *American Journal of the Medical Sciences*, by SIR SPENCER WELLS, DR. ALFRED HEGAR, and DR. ROBERT BATTEY. We could only expect that each of the papers singly would be of interest; and as they appear together triple interest is given to the subject.

In some respects the contribution of Sir Spencer Wells may be looked upon as a moral polemic, or philippic, against the abuse of the operation, and on this point Dr. Battey also has something to say. In view of the nature of the operation, however, too much cannot be said against its abuse. If the duties of the surgeon often lead him near the line that separates the legal and justifiable from the illegal, he should on that account be all the more cautious of overstepping this line. There has always, we may presume, been such a fascination about a new operation as to give to most of those who could handle a knife, a case of acute *pruritus secandi*; certainly such is the case now. Sometimes it has almost seemed that a new operation has been invented for the purpose of coining a new Greek compound. Of late years the good old word "obstetrician" has been metamorphosed into "gynecologist" in too many instances, and therapeutic specialties have too often taken the place of broad principles. "Groping among details is an absorbing and paralyzing occupation, and soon the curve of a pessary or the lining of a speculum fills the field of vision, and great principles are lost sight of."

It is not until we read fifteen pages of the contribution of Sir Spencer Wells that we come to know what he thinks (really) of oöphorectomy. While what he says, generally, of unnecessary operations on the reproductive organs of women is good, and has been so considered for several years, the result is really to obscure the discussion of the main question. He draws the following conclusions regarding castration for nervous diseases: 1. The operation of oöphorectomy, or removal of the normal ovaries, is one which may be advised in some cases of uterine fibroids, and in uncontrollable uterine hæmorrhages. 2. It is to be resorted to in certain malformations of the genital organs, deformities of the pelvis, and accidental obstructions of the vagina. 3. The right to use it is very limited in cases of ovarian dysmenorrhœa or neuralgia, and only when they have resisted all treatment, and life or reason in endangered. 4. In nearly all cases of nervous excitement and madness it is inadmissible. 5. It should never be done without the consent of a sane patient, to whom its consequences have been explained. 6. The excision of morbid ovaries and appendages should be distinguished from oöphorectomy, and ought not to be done without the authority of consultation, as in most other cases of abdominal section. 7. In nymphomania and mental diseases it is, to say the least, unjustifiable. It will be seen that Sir Spencer Wells does not take into account the removal of *diseased* ovaries for nervous disease (except perhaps in 7), and it is this particular point that his paper not only differs from those of Hegar and Battey, but is actually incomplete. He assumes throughout that normal ovaries are being removed, and it is against this operation that his polemic is directed. It is to be regretted that he did not discuss the question at issue more fully.

Dr. Battey opens his paper as follows: "Within my knowledge it has not been the practice of American surgeons to attempt the cure of mental and nervous disorders by the removal of healthy ovaries or of healthy tubes. The ovaries removed, and the tubes as well, have presented signs of disease—signs which are evident to the naked eye and palpable to the sense of touch. For the misconception upon this point still existing, my own ignorance of both the histology and pathology of the ovaries is largely responsible in that, during the early history of the operation, I removed ovaries which I erroneously supposed to be healthy, and gave to the operation the unfortunate and now obsolete name of 'normal ovariotomy.'" Thus, in a breath almost, are the first fifteen pages of Sir Spencer Well's paper disposed of. Now let us look at Battey's results. The operations

under consideration, he tells us, have been done for the relief of mental and nervous disorders, which may be divided into three classes: oöphoro-mania, oöphoro-epilepsy, and oöphoralgia. He uses the first two terms instead of hystero-mania and hystero-epilepsy because his clinical experience teaches him that these disorders are dependent upon a nervous irritation proceeding from the ovaries and not from the uterus. "I say that my clinical experiences so teaches me, because (*a*) I find the disorders existing in cases where I recognize organic disease of the ovaries, and am not able to recognize any organic disease of the uterus; (*b*) in cases of uterine as well as ovarian disease, when the diseased ovaries are removed, the nervous disturbance disappears notwithstanding the fact that a displaced or diseased uterus may remain. . . . In general, epileptiform manifestations have ceased at once. Some of the cases have required for a time the tranquillizing effects of the bromides to ward off threatening symptoms, whilst others have needed nothing. My cases of mania have all been quite chronic and the improvement has been slow. In oöphoralgia, in a few instances, the cure has been immediate and permanent. In the majority it has been slow and gradual; and in others nothing has been gained for even two years after the operation. In a few of these cases the long-established opium habit has proved a complete bar to recovery." Of his cases which have had two or more years to test them 7 were cases of oöphoro-mania, with 1 cured, 4 improved; 9 cases of oöphoro-epilepsy, 9 cured; oöphoralgia 20, 13 cured, 3 improved, 4 not improved. The cases of oöphoro-epilepsy were cured promptly and completely.

Dr. Battey's results are thus seen to directly controvert the last of the conclusions drawn by Sir Spencer Wells. As the others relate to the excision of normal ovaries it is obvious that they cannot be discussed, except to say that they are almost foregone conclusions. But let us look at the array of authorities, quoted by Battey, which show that removal of *diseased* ovaries is justified in mental and nervous diseases. Dr. Wm. H. Byford says: In looking over my cases I find that all my patients on whom I have operated for nervous disorders were greatly benefited. Three years ago I did this operation for an aggravated form of nymphomania. The patient is now cured of her terrible malady. In a case of double oöphorectomy for the relief of prolonged invalidism attended by headache of indescribable severity, the operation was an entire success. This patient, four years before the operation, was insane for several months. It is now five years and the patient remains in good health. I entertain no question that the operation is entitled to a legitimate place in surgery for desperate nervous conditions. Dr. Mann, of Buffalo, reports two operations for oöphoralgia, done more than two years ago, both cures. Dr. Sutton says: I have observed in many cases that when marked nervousness existed, it either entirely disappeared or was greatly lessened after removal of the ovaries and tubes. Dr. Wm. T. Howard reports a case of hystero-epilepsy (oöphoro-epilepsy), operated on three years ago, now cured. Dr. H. P. C. Wilson says: In my hands the operation of castration in women for nervous and mental diseases has been most satisfactory; all the cases that I and my son, Dr. Robert T. Wilson, have operated on for the above conditions have either been much benefited or entirely cured. He mentions one case of hystero-epileptiform convulsions, of several years' standing, which was entirely cured. Dr. Goodell says: After the lapse of many years my cases of oöphorectomy for insanity, for hystero-mania, hystero-epilepsy, and pelvic neuralgia, show positive and permanent benefit. I can recall but two failures, and those were two cases out of eight of insanity or threatened insanity. The remainder, six in number, were cured. A ninth case, a dreadful one of hysteria, menorrhagia and dysmenorrhœa, had two attacks of insanity after removal of her ovaries. Dr. T. Gaillard Thomas says: For all nervous and mental disorders in women which are created or markedly aggravated by the process of ovulation I regard castration as a most valuable resource. His experience with the operation for purely nervous and mental disorders extends to five cases: A case of insanity (menstrual) cured, a case of hystero-epilepsy cured, a case of menstrual epilepsy cured, and two cases of epilepsy not improved. "Castration of the female for nervous diseases has, in my opinion, a brilliant future before it, and yet, I feel that in this and in other conditions it is now being greatly abused by resort to it in entirely inappropriate and unnecessary cases." All the writers quoted express the fear that the operation will be abused, and think its field limited.

We have but little space in which to speak of the admirable paper of Professor Hegar, in which he discusses the subject both scientifically and practically. "Castration is indicated in a psychosis evoked or maintained by pathological alterations of the sexual organs, and in a neurosis originating from the same source, as soon as this imperils life or hinders all occupation and all enjoyment of life. The indication is also present when that disease represents

only one causal factor in the genesis of the affection, without the removal of which a cure is not to be thought of. Of course, also, the remaining causes of suffering must be in this case accessible to treatment. Other milder methods of treatment must have been tried previously without success, or, as in the case of many small tumors of the ovaries and tubes, must from the outset give no promise of success. Castration must actually affect the cause which occasions or keeps up nervous irritation. The operation will thus be of use when a degenerated or dislocated ovary represents the irritative focus, or as soon as a greatly swollen and retroflected uterus presses on the sexual plexus and the organ is brought into a state of atrophy. Castration promises success when the bleeding and anæmia occasioned by a fibroma play an important part in the maintenance of a psychosis, so that a cure does not appear possible without getting rid of that evil; but castration is absolutely no universal remedy for any neurosis originating from a genital-organ disorder, or kept up by the same. The cessation of ovulation will avail nothing if the irritation starts from the nerves which are compressed in a shrunken cicatrix of the broad ligament, or elsewhere in a cicatrix of the pelvic connective tissue." Altogether, it may be said that no previous paper has appeared in which this subject has been so thoroughly and impartially discussed, in all its bearings, as in the contribution of Dr. Hegar.

THE DUTIES OF SECRETARIES OF SECTIONS.

In THE JOURNAL of October 30, DR. B. A. WATSON has called attention to some defects in the practical working of the Sections of the Association, and chiefly to the fact that the discussions on papers are not fully reported. It must be said that this charge is true. The discussions as sent with papers to this office are usually entirely valueless, and in not a single case for two years have they been at all full. It is of no earthly interest to anyone to know that a certain paper "was discussed by Drs. Brown, Jones, Smith, Johnson, and several others." There is no information to be gained by reading that "Dr. —— asked a question about the dose of croton oil, and Dr. —— answered it." It may be true that "Dr. ——'s paper was ably discussed by several gentlemen." We must presuppose that all papers read before the Association are discussed by gentlemen when discussed at all, but it is for the readers of the discussions to say whether the discussions were able or not. Our curiosity is excited by reading in a Secretary's report that "The discussion was closed by Dr. ——," but our stock of information is not increased.

In regard to one point we must take issue with Dr. Watson: it is in many cases practicable to write out a discussion before going to the meeting of the Association. It is done in other scientific bodies. And should any matter come up which has not been embodied in the written discussion, it can be easily added to what has been written. And should no new point come up the discussion is ready to be handed over to the Secretary. To say the least, those who discuss papers should do all that they can to assist the Secretaries in making out a useful report of the Sectional meetings. If a paper is worth discussion it is worth while for those who discuss it to make a little self-sacrifice in having their remarks appear in proper form, and accurately.

The position of Secretary of a Section is a purely honorary one, but for all that he who accepts it should feel it a duty to do his work properly and carefully. It is regarded as an honor to be elected to such a position, but it should not be regarded as an honor which entails no duty or work on the recipient. No one should accept the position who is unwilling to do the work devolving upon him. It is entirely useless for a Secretary to report in full the business transactions of his Section to the Editor of THE JOURNAL. This properly belongs to the business of the Association, and as such should be sent to the Permanent Secretary to be incorporated in his report. THE JOURNAL does not publish separate reports of the Sectional meetings of the Association, and when they come to this office they are only so much waste paper. What is wanted of the Secretaries of Sections is an accurate and full report of the discussions on papers read in the Sections, giving simply the name of the author and the title of his paper. Abstracts of papers read in the Sections are of no value whatever, as the papers are published in full in THE JOURNAL. It will be noticed that in THE JOURNAL the discussions, such as are sent, are placed immediately after the papers. The reason for this is obvious: the papers are published at different times, not in a lump, and it would be annoying to have to refer back possibly eight or ten numbers to read the discussion on a certain paper.

There can be no doubt that the discussions in the Sections would be better if the authors of papers would spend a little more time on them, and send, at an early date, the main facts and conclusions to be drawn to the Chairman or Secretary of their Section, who could furnish them to such persons as would be likely to discuss the papers. Each person

who writes a paper should try to make an actual addition to our stock of *facts*. A speculative paper may be interesting enough at times, but as a rule it is only an encumbrance to medical literature.

THE INTERNATIONAL MEDICAL CONGRESS.

The following just and liberal sentiments, taken from the editorial department of the *St. Louis Courier of Medicine*, will be cordially approved by the profession in this country:

The success of the International Congress, which is to be held in Washington, D. C., next year, can no longer be questioned. Reports from physicians who have been abroad this last summer warrant the confident expectation that large delegations of eminent physicians from the various European countries are already laying their plans to attend the Congress. The differences which arose between some of the most prominent members of the profession, in our own country, and which, for a time, threatened to render the meeting an entire failure, have been to some degree adjusted, and to some degree subordinated to a recognition of the paramount importance of the general interests of the profession at large over the personal dignity of the individual.

The officers who have been selected for carrying out the arrangements are men of ability and energy, who will spare no effort to make the occasion one of profitable enjoyment to the many guests who are expected from abroad, as well as to the much greater number from all over our own country who will crowd to the National capital for the sake of meeting and hearing the ablest representatives of medicine and surgery from beyond the ocean.

We anticipate very much of profit to our own country from the results of this meeting. It will bring the profession here into relations of personal friendship and intimacy with that of the old world, as a result of the visit to us of so many of their leaders, which would never be reached so long as the visiting was done solely by Americans. Americans have been honored guests at the meetings of the International Congress held in various European centres, and now the opportunity is afforded us to honor ourselves more highly, in doing honor, as becomes our Nation, to the representative men of the profession throughout Europe.

Let us all unite to make this meeting of the International Medical Congress the best possible success by burying all feelings of personal pique or slight, or even of injury, and showing to the world that the profession of the United States is heartily one in welcoming our friends from abroad. Let our best men attend, and carry with them the evidence of their interest in papers giving the well-digested results of their experience. So shall we do the highest honor to our guests in treating them to the choicest results of our labors, and at the same time elevate the standard of professional work here.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF VIRGINIA.

Seventeenth Annual Session, held at Fredericksburg, Va., October 26, 27, and 28, 1886.

The State Medical Society of Virginia convened in the historical city of Fredericksburg October 26, at 8 P.M. The attendance was large, and representative of the profession of the State. In addition, Drs. Theophilus Parvin and Wm. S. Forbes, of Philadelphia, Pa., Archibald Atkinson and Frank Donaldson, Jr., of Baltimore, Md., Wm. T. Cheatham, of Henderson, N. C., J. Taber Johnson and Patrick J. Murphy, of Washington, D. C., and Thomas R. Evans, of Mt. Carbon, W. Va., were present as guests.

According to custom, the meeting of the first night was open to the public as well as to the profession. The Opera House was well filled with ladies and citizens at the hour of meeting, notwithstanding the very rainy weather.

After the PRESIDENT, DR. RAWLEY W. MARTIN, Chatham, Va., called the session to order, and after prayer by the Rev. Dr. James P. Smith, of the Presbyterian Church, and addresses of welcome by Mr. Mason, on the part of the citizens, and Dr. H. M. D. Martin, on the part of the local profession, DR. HUGH T. NELSON, of Charlottesville, Va., was introduced, and delivered the "Annual Address to the Public and Profession," his subject being

THE FALLACIES OF MODERN MEDICINE.

The committee to nominate applicants for Fellowship during this session presented sixty-three applications, each of which was approved.

The report of the Necrological committee, prepared by the Chairman, Honorary Fellow Dr. S. C. Gleaves, of Wytheville, Va., contained memoirs of the following named deceased fellows:

Honorary Fellow and ex-President Dr. A. M. Fauntleroy, of Staunton, Drs. Meade Kemper, of Norfolk, Thos. D. Stokes, of Danville, David Steel, of Petersburg, J. T. Spencer, of Farmville, Richard H. Cox, of West Point, and Jenifer Garnett, of Richmond.

WEDNESDAY, OCTOBER 27.—SECOND DAY.

MORNING SESSION.

The Society was called to order at 9:30 A.M. by the First Vice-President, Dr. John M. Apperson, of Town House, Va.

Honorary Fellow Dr. John Herbert Claiborne, of Petersburg, Va., presented a paper on

SCHOOL HYGIENE.

He said that he had seen an article in a recent popular monthly on *The Bodies of Our Children*, to which subject he would limit his remarks. This article had set him to thinking and inquiring how much had been done for the "souls" and "minds" of our children, and how little for their "bodies." The parent and the preacher, from pen and from pulpit, had given line upon line, precept upon precept, while the Sunday School, with pictures, charts and maps, and pretty books, had made the way so pleasant that it could no longer be called straight, nor its gates narrow. Indeed, so many asperities had been rasped down, so many rough places had been made plain, so many mountains brought down, so many valleys upraised, that the old Pilgrim of Bunyan would no longer recognize the road which he had trodden in so much pain and peril. And the public and the parents had given so much time and money to the "mind" that schools and colleges and universities covered every hill—and saying nothing of *private* schools—about one-third of the taxes assessed in this commonwealth were assessed for purposes of education. The "minds" were thoroughly looked after—were strained, even forced, as potatoes in a hot-bed—and boys and girls were expected to be "wise beyond what is written."

But the bodies—effeminate, emasculate, enervate—were left to struggle in pain and ignorance, with the great labors and trials of life, and, finally called on to do a man's work or a woman's work, without power, what was the result? Failure of the men, feeble and of impoverished strength to meet the great requirements of an age of energy and exaction; and for the women the shawl, the sofa, neuralgia, headache, backache, hysteria, the last that great demon of domestic life, scarcely less fruitful of unhappiness in the family than the husband's dram. For this he held the parent, no less than the teacher, responsible—the desire of the one and the requirement of the other that the minds of the young of both sexes should be filled, in a few years of school life, with all knowledge and all accomplishments.

The remedy lay in a little common sense consideration of the whole subject, that same common sense which sensible people apply to all other enterprises and objects of life. The parent must exact less, and the teacher be content with less. Again, mental and physical training must be conducted at the same time and in the same school. A regular time should be appropriated to play, as to study, and children should be taught to *play*, as they are taught to study. The play-room or gymnasium should be built when the school house is built, and the children should no more be turned loose to play and train themselves in the one, than they should be turned loose to study and educate themselves in the other; not only failure, but confusion, pandemonium, would prevail in both; and a teacher that can be made capable of teaching the mind of the young, can be made capable of training the body of the young. One teacher may only be a teacher of the rudiments of the one, and one teacher may only be a teacher of the rudiments of the other, but skilled labor, skilled service may be acquired for both by proper compensation, and by proper training of teachers.

This subject was deemed of such great practical importance that a resolution was unanimously adopted urging upon the Superintendent of Public Instruction of Virginia, the suggestion that he should have thousands of copies of the paper struck off in pamphlet form, to be distributed to teachers and patrons of schools throughout the State.

Dr. J. A. Anderson, of Elba, presented

A REPORT ON ADVANCES IN ANATOMY AND PHYSIOLOGY.

Taking up first the department of *Physiology*, he spoke of some recent observations relating to the process of digestion, noting Reichmann's conclusions regarding the digestion of milk. Then he summarized Löwenthal's theory of menstruation. Simanowsky's experiments on dogs, clearing up in a great measure the physiology of hepatic colic, were then dwelt upon. The views of A. Weiss, as to what becomes of the bile in the intestines, were mentioned. He then presented the latest observations relating to the connection between glycosuria and biliary obstructions. Schneiber's discovery as to how albuminuria can be experimentally produced in man, was detailed. The functions ascribed to the corpus striatum by Baginsky and Lehmann were recorded. Freund's demonstration that the coagulation of blood is hindered by the use of oil, was alluded to. After speaking of the recent views as to the origin of the fibrin ferment, Dr. Anderson passed on to *Advances in Anatomy*, mentioning first the use of the fossa at the lower end of the fibula. Then he described Gruber's extensor tendons of the fingers, and Walsham's crico-hyoid muscles.

The Secretary presented, by title, a paper by Honorary Fellow Dr. J. M. Toner, of Washington, D.C., giving "*A Sketch of the Life of Dr. Gustavus Richard Brown, of Port Tobacco, Maryland, one of the Consulting Physicians during the Last Illness of General George Washington, at Mt. Vernon, Va., together with a Copy of his Will.*" This is the last of the sketches of the three physicians attending General Washington, which Dr. Toner has contributed to the "Transactions" of the Society in as many years, and which are of great historic value to Virginia, and especially to the profession of Virginia. These contributions are specially prized, as no one else could or would have been painstaking and liberal enough to collect and contribute the data Dr. Toner herein furnishes.

The President, Dr. Rawley W. Martin, of Chatham, then delivered the *Address of the President*, on

PRACTICAL HINTS ON HYGIENE.

He remarked that until a recent period the profession has been too much engrossed in finding cures for many diseases which are now better managed by taking the ounce of prevention. The profession is now everywhere aroused to the importance of preventive medicine. He urged physicians to teach

the people hygiene. Hygiene should be a part of the school curriculum.

The chief cause of malarial diseases is the want of proper drainage of our lands. The destruction of forests is always followed by increased sickness. Therefore the waste of timber should be prohibited by law. He urged the members to get their legislators to vote for an appropriation to sustain the State Board of Health.

Artificial feeding of infants is believed to be largely responsible for their increased mortality. The failure of American mothers to nurse their offspring is an anomaly to be found in no other country in the world.

Insanity is largely due to the violation of Nature's laws, and to the large consumption of alcoholic beverages. Their influence in shortening life may be gleaned from the following: A temperate man at the age of 20 may expect to live 44 years; if intemtemperate, 15.5 years.

The general discussion on

PUERPERAL SEPTICÆMIA

was opened by DR. L. ASHTON, of Falmouth. He defined puerperal septicæmia as an infectious disease, due to inoculation of the wounds which result from the separation of the decidua, and passage of the child through the parturient canal, as well as from infectious diseases, such as erysipelas and all zymotic forms. He described the disease as being a *metritis*, a *vaginitis*, a *peritonitis*, a *cellulitis*, and a *phlebitis*, and discussed fully the characteristic symptoms of each. He traced the history of the disease from the days of Hippocrates, giving the different views held by the leaders in medicine down to the present time, as to the nature of the disease, and showed that Semmelweis, of Vienna, in 1847 first taught that the disease was produced by the poison engendered by cadaveric decay, and that at this day all modern investigators acknowledged it to be due to a septic material which enters the circulation through solution of continuity in the generative tract or to some of the infectious diseases. He dwelt earnestly upon the importance of clearly diagnosticating between puerperal septicæmia and pyæmia. Prevention was next considered, and he gave the views of Thomas, Garrigues, and others, and discussed fully the importance of absolute cleanliness on the part of the obstetrician, and the obstetric equipment, but entered an earnest protest against the folly and uselessness, in ordinary labors, of using the germicides, etc., as advised by Fancourt Barnes, Doléris, and many others, and contended that pure clean water that has been boiled, is all that is requisite in most cases.

In the treatment, he says, the first thing to do on rise of temperature indicating an attack of puerperal septicæmia, is to cleanse the vagina with a 2 or 3 per cent. solution of carbolic acid, or listerine (1–4), or corrosive sublimate (1–3000), every four to six hours. Much stress is laid upon the importance of intra-uterine injections in the successful treatment of the disease. Great caution is necessary in their use, and the intelligent physician should make them himself, using always a Chamberlain glass tube, or the tube invented by Dr. Lyman, of New York, fitted to a Davidson's syringe. Opium to control pain and nervous shock, is highly spoken of, when given in sufficiently large doses. To reduce temperature, salicylic acid, or antipyrin preceding quinine, with the use of cold applied by means of the Skibber's cot, Townsend's rubber-tent coil, or sponging. Alcohol holds a high place in the treatment, as does digitalis. The dirt in all cases should receive particular attention as a means of restoring tissue waste.

The President requested DR. THEOPHILUS PARVIN, of Philadelphia, Pa., attending the session by invitation, to present his views on puerperal septicæmia.

DR. PARVIN began by stating that scarcely had he arrived in this City before he received two evidences of Virginia hospitality. First, as he stepped off the train, he was accosted by a citizen who so courteously insisted upon his breakfasting with him that he had to accept the invitation. Secondly, he had arrived in this hall only a few minutes before he was informed that the Society wanted him to make some remarks on this subject.

In the acceptance of this latter invitation, he was reminded of the anecdote told upon one of Virginia's brightest orators, the illustrious John Randolph, of Roanoke. Randolph used to say when he had finished a speech, that he always regretted what he had not said. As for himself, Dr. Parvin said that he feared that when he was done he would have to regret what he had said.

In the outset, he said that if he were called upon to give a definition of the term puerperal septicæmia, he would define it somewhat after this manner: Puerperal septicæmia is a febrile affection of woman in childbed, which is contagious and heterogenetic. He believes the disease is dependent on germs for the following reasons:

1. The smallest particle of infected matter conveyed from one puerperal woman to the vagino-uterine tract of another woman in childbed gives the disease.

2. We may assume this statement to be correct from what we know to be the effect of germicides in preventing the disease.

3. Analogy also helps us to this conclusion, as we know that many diseases are dependent upon the introduction of living germs into the system.

Some gentlemen say that germs are autogenetic. Whoever believes this must believe in spontaneous generation. Dr. Parvin believes in no such doctrine. We don't say that scarlet fever begins itself. The poison is conveyed from outside—from another case of scarlet fever. So we say of puerperal septicæmia. The disease of which we are speaking, and which kills the woman, is not born in her. It is brought to and deposited in her from a preceding case of puerperal septicæmia. He does not believe that scarlet fever, diphtheria, or erysipelas can produce puerperal septicæmia. In a word, these specific poisons of these diseases are not identical with that of puerperal septicæmia, but they may be associated in one case, and thus have the appearance of conveying these different diseases. But a dog cannot breed a cat, although they may associate with each other. He referred to

a fatal case of puerperal septicæmia in a mother who had nursed her child through an attack of scarlet fever, but when she was confined immediately afterwards, she had a nurse who had been with a case of puerperal septicæmia. The question has often been asked, Can a puerperal woman have puerperal septicæmia without having a wounded womb? He does not believe it. He has never seen a case unless there was a wounded uterine surface. Likewise the question has been asked, Don't retained membranes, clots, etc., become causes of puerperal septicæmia? I would answer, "no," provided they are kept aseptic. These decaying secundines simply furnish the suitable soil for the nourishment of the microbe. The poison itself always comes from without.

Dr. Ashton, in his elaborate and well prepared paper, spoke of diphtheria of the vagina as a form of puerperal fever. Dr. Parvin would remark that only a few authors of the present day admit that there is any such form. He does not think such a form really exists. Some authors have supposed that there was no puerperal septicæmia without a very high temperature. But he has seen cases where the temperature never rose over 101° or 102° F., and the pulse not more frequent than 100 per minute.

Dr. Parvin divides puerperal septicæmia clinically into two forms: (1) Lymphangitis, and (2) phlebitis.

Lymphangitis occurs early after the onset of septicæmia—by the second day—and the inflammation extends to other pelvic and abdominal tissues causing even puerperal peritonitis. In this form of septicæmia in the childbed woman, we may find that the patient had an ushering-in chill, but such an event is not necessary to its clinical history.

In the *phlebitic form*, we always find that the woman has repeat-chills. The milk-leg form is also the safest to the patient, as it indicates a localization and a limitation of the disease. The adhesive form of puerperal phlebitis is not of spontaneous origin.

Dr. Fordyce Barker and others have written much about the prevalence of malarial puerperal fever. In the fifty or more cases of puerperal woman seen by Dr. Parvin, he has seen only two cases of puerperal malarial fever. In this intermittent form of puerperal fever, the temperature rises from the normal or nearly normal standard suddenly and very high, and as suddenly falls to the nearly natural elevation.

As to the *treatment*, Dr. Parvin has tried many plans, but the result of his experiences has brought him to depend chiefly upon opium and whiskey. Nourishing food should be given throughout the disease. Antipyrin, quinine, etc., undoubtedly may do good for awhile in lowering the temperature, but they soon break down the tone of the stomach, and impair the digestive function. It is true he uses these agents sometimes to meet a specific and a purely temporary indication; but he certainly would not depend upon either of them for a continuous or prolonged treatment. In recommending the free use of alcohol in suitable cases, he would not be understood as saying that it is needed in the majority of instances. But when the temperature rises to 103° or 104°, its temporary administrations acts well. It induces sleep, allays nervous agitation, and lessens the fever heat very ostensibly.

In summarizing his remarks after the narration of some sad experience many years ago, coming out of the views which had been taught him by the great Professors of the Philadelphia schools when he was a medical student in that city—that puerperal fever was autogenetic—he said: "Gentlemen, if there is one thing impressed upon my mind more than another, it is the conviction, as if written with fingers of fire upon my memory, that puerperal septicæmia is contagious."

Dr. John N. Upshur, of Richmond, reported a case of puerperal septicæmia which he thought gave a good example of the autogenetic origin of the affection, the source of contamination being the suppurating endometrium. The attack set in two weeks subsequent to confinement, after what seemed to be a perfect convalescence, the only symptom pointing to trouble being the character of the lochial discharge, it continuing *bright red too long*. The appearance of a foul-smelling diarrhœa, as a critical discharge, was a point of interest. The death of a sister of this patient from septicæmia, she being three months advanced in pregnancy, who, from her condition, was more susceptible to contagion, and the probability that her attack was contracted from exposure to the foul air of her sister's chamber, incident to the alvine discharges, makes the supposition that the contagion entered her system through the lungs plausible, and gives an example of the heterogenetic origin of the disease. The prompt action of amyl nitrite, the large amount taken, and its long continuance when the patient was profoundly collapsed, and death seemed imminent, was also a point of interest.

Dr. Upshur stated it as his opinion that, while quinine and the salicylates are not curative in the treatment of puerperal septicæmia, yet they exert an antidotal influence on the poison circulating in the blood, and thus prove beneficial.

Dr. Chas. R. Cullen, of Richmond, said that as soon as delivery is completed, the womb is left in a condition which makes it subject to infection from several diseases, as erysipelas, scarlet fever, sloughing sores, carbuncles, cancer, etc. The principal writers admit the clinical fact, but disagree as to the agents producing the infection—whether ptomaines or decomposing matter, or bacilli, or bacteria, or microbes. Dr. Barnes, of London, admitted that puerperal septicæmia might be propagated even by the breath of the physician or nurse, and says that the disease is more liable to occur in primiparal cases. Dr. Guérin, of Paris, confirms these statements. Dr. Cullen then referred to the histories of several reported epidemics, showing the great contagiousness—both from other cases of puerperal fever and from other diseases—and fatality of the disease, and quoted from foreign and domestic records to prove his point. The great English surgeon, Dr. Hunter, said that his first case of puerperal fever commenced from his handling an ordinary sloughing felon on a patient's finger, and soon afterwards attending a puerperal woman. From this case, a large number of fatal cases developed. He discontinued obstetrical practice, and got his

partner, who had not been in any of the infected cases, to attend six other cases of labor, and no puerperal disease resulted. He then resumed his obstetrical practice, when the disease reappeared in his cases, and he was compelled to discontinue obstetric attendance. Dr. Cullen gave other instances, leading to the deduction that surgeons should not attend labor cases—not that all surgeons would be conveyors of puerperal septicæmia, but the dangers are too great in that direction.

As to treatment, he advocated isolation of the patient, and disinfection of all persons and things to come in contact with her genitalia. Vaginal washes of weak solutions of corrosive sublimate, etc., should be used.

DR. B. B TEMPLE, of Danville, said that no one in his city who comes in contact with a case of scarlet fever, diphtheria, erysipelas, and the like, was allowed, by professional opinion there, to attend a case of labor. He thinks, as a result of this prohibition, that puerperal septicæmia is very rare, if it occurs at all in his city.

DR. WM. S. FORBES, of Philadelphia, present by invitation, in response to a request for a statement of his views, apologized for not speaking on the subject because of feeling unwell. He would remark, however, that one thing had impressed him, and that was the special adaptability of woman to septicæmia. Septicæmia follows in those surgical cases especially where depletion has occurred. For instance, he has been struck with the frequency of its occurrence amongst "strikers" who have received wounds or injuries. Without work, they soon become unable to provide for their healthful sustenance and nourishment, and their physical organisms become depraved, thus laying themselves the more liable to such a disease.

DR. PATRICK J. MURPHY, of Washington, D. C., in response to an invitation to express his opinions, said he would limit his remarks to a few clinical facts which had been impressed upon him by his fifteen years' experience in the Columbia Lying-in Hospital, where he had met with all forms of the disease. He was rather inclined to accept the views of Dr. Parvin in regard to the matters of autogenesis and heterogenesis. Before antiseptics were introduced, puerperal fever was much more frequent in practice than it is now. He objects to the term "puerperal fever" as applicable to the disease under consideration—preferring that of *puerperal septicæmia*.

In regard to the treatment, the two important things were: first, prophylaxis; and second, curative agencies. By the prophylactic measures adopted, he has seen the death-rate reduced from 9 per cent. to 2 per cent. During the second stage of labor, when the os uteri is sufficiently dilated, he uses a hot 6 per cent. carbolized douche into the vagina. This measure takes the place of ergot in producing uterine contractions. When the child is born, if the placenta is not immediately expelled, he uses Credé's method, by using gentle friction backwards on the abdomen, and this soon brings on labor pains which expel the after-birth. He next cleanses the parts with simple sponge-baths, and then applies cotton to the vulva. As to the curative treatment, he agrees with Dr. Parvin as to the value of opium and whisky, and as to the impropriety of depending on such agents as antipyrin, quinia, etc. In fact, he objects to the use of antipyrin in cases of puerperal septicæmia, while he thinks the administration of quinia in anything like heroic doses is to be condemned. He has found spirits of turpentine better than whisky, both for internal use and externally for stupes. If there be much pain, he resorts to suppositories of extract of Indian hemp. He has seen Warburg's tincture, Norwood's tincture of veratrum viride, etc., tried as antipyretics and fail. If the typhoid form of the disease sets in, he treats the case as he would one of typhoid fever. Instead of the cold water coil, he uses a flannel bandage over the abdomen, over which he pours alcohol, which rapidly evaporates. The cold water coil is too apt to produce shock.

AFTERNOON SESSION.

DR. JOHN S. APPERSON, of Town House, Va., read a paper on "Puerperal Septicæmia." The question which he thinks of paramount importance to decide is whether we shall accept the dicta that puerperal fever is identical with surgical septicæmia, and produced by the absorption of septic matter, "either originating within the generative organs of the patient herself, or coming from without," and regard every puerperal woman, by virtue of her physiological state, as supplying suitable culture-beds for the propagation and growth of pathogenous fungi. If so, then we might formulate the practical inquiry: To what extent are we justified in the local use of disinfectants, antiseptics, and potent germicides prior to, at the time of, and subsequent to labor?

Examination of the record of the 656 cases of labor in Dr. Apperson's practice, where no systematic use of any antiseptic has been applied, shows that only ten cases of metria in any form have occurred, and only one death. He could hardly expect a better result. He has seen many other labor cases, but is rarely called to a case of puerperal fever. Hence the conclusion, that pathogenic fungi are not so prevalent as might be inferred from the writings of authors on the subject. Cleanliness he specially insists on in the lying-in room.

DR. BEDFORD BROWN, of Alexandria, read a report of

SIX CASES OF PUERPERAL SEPTICÆMIA ILLUSTRATING THE RESULTS OF TREATMENT UNDER THE OLD AND THE NEW METHODS.

He believes veratrum viride peculiarly adapted to the treatment of the morbid changes in the circulatory system and the pyrexia. It acts as a nervous sedative and prevents heart labor and exhaustion. For the tympanites, 2 pints of infusion of flaxseed containing a drachm of oil of turpentine, 5 to 10 drops of carbolic acid and 1 ounce of Listerine, are thrown up the rectum into the colon twice daily. As to prevention, in no case where antiseptics have been properly used in labor has he met with puerperal septicæmia. His invariable custom is to cleanse

out the genital canals by carbolic soap, warm water, and borax. He believes ergot also is an important prophylactic, especially when the uterus is large, flabby and relaxed. Keep the uterus under its influence until all probability of infection has ceased.

Dr. Thos. J. Moore, of Richmond, first discussed the origin of puerperal fever. He regards the cause as identical with that of puerperal septicæmia, and they were therefore one and the same disease. The germ theory was fascinating to the investigating mind beyond conception. The French, German, English and American schools had all met upon common ground.

He then replied to the argument offered by Prof. Parvin, in which the latter had stated that it was impossible for scarlet fever, diphtheria, erysipelas, etc., to produce puerperal fever, as the peculiar microbe (or bacillus) would not give rise to a disease different from the special disease it was peculiar to. Dr. Moore said that he could not agree with the eminent Professor. In the first place, it was yet undetermined as to whether the three diseases above mentioned had a special microbe; secondly, all diseases producing puerperal fever from without had associated with their causative material the micrococcus of putrefactive decomposition; in other words, it was their secretions undergoing decomposition that gave rise to this common resultant—puerperal fever. Such was the case likewise with pyæmia and septicæmia. If the micrococci theory was not the proper one, then all of these diseases, through the process of retrograde metamorphosis, gave rise to some special animal poison that caused this disease, this process being fermentative in its nature. He accepted both author and heterogenesis. The poison, he believed, as a rule, entered through some abraded or torn surface through the lymphatics and the veins; sometimes it penetrated healthy mucous membranes, as demonstrated when females suffered an attack of this fever prior to parturition.

In regard to treatment, he belived much that was done during the act of parturition, meddlesome and harmful. He did not believe the female of the present day was so susceptible to pernicious impressions as many of the more enthusiastic would have us believe; he did not believe that any woman's life was imperiled where all the minutiæ of details as laid down were not complied with. He gave his own experience in one of the largest lying-in hospitals in the United States, seventeen years ago, prior to the origin of this new school. Mere cleanliness of beds, wards and water-closets was observed, and for months they were without fever; in fact, could have remained indefinitely so. He had not the same dread of these microbes as many of the gentlemen of the present day; he believed in precautions, but not to the same extent as those who were on the *qui vive* of apprehension.

Prof. Parvin entered the hall as Dr. Moore ceased speaking, and Dr. Hunter McGuire arose and said that several Fellows speaking during Dr. Parvin's absence were unable to reconcile the statement made by that learned professor: that while he believed that scarlet fever, diphtheria and erysipelas were the results of separate and distinct poisons, each one of which was able, by contagion, of reproducing its own disease and no other, any one of them might, under certain circumstances, generate puerperal septicæmia. How could scarlet fever, for instance, which was capable of producing scarlet fever *only*, under certain favorable circumstances produce septicæmia in the parturient woman?

Dr. Parvin replied that he could understand the ground for the seeming inconsistency as it occurs to Dr. Moore. In formulating his opinions as to contagiousness from another case of puerperal septicæmia being the sole cause of the disease, he would not have it understood that he states a fact, but a belief. The specific poison of the septicæmia is often *associated* with that of scarlet fever, diphtheria, erysipelas, etc.; and hence, in the production of puerperal septicæmia by contagion from such diseases, there is the appearance that the poison of the one disease is the same as that of the other. It is a fact of interest in this connection, that apparently the same micrococcus occurs in erysipelas as in puerperal septicæmia. It cannot be differentiated by the microscope, or other known means, but it can be by the effect produced.

He wished to add a few remarks to those he made this morning in regard to treatment. *Local treatment* is the most important. In the way of prophylaxis, first, the utmost care should be exercised, from the very threatening of labor to its full completion, that no infected person or thing be brought in contact with her genitalia. Do not make unnecessarily frequent or prolonged digital examinations *per vaginam*. He would much prefer that the accoucheur should keep his hands in his pockets, and leave the labor to Nature, than that he should keep his finger anything like continuously on the *os tincæ*, or anywhere else about the vulvo-vaginal uterine tract. Let everything and anything that is to come in contact with the woman be perfectly clean and freed from any infectious germ. In the second place, under the head of local prophylaxis, he thinks well of the resort to vaginal douches as soon as labor is over; and, according to the indications in any given case, he uses vaginal injections of solutions of corrosive sublimate of the strength of 1 to 1000, or 2000, or 3000. If fever develops, he substitutes 3 per cent. solutions of carbolic acid. This solution he applies to the whole vaginal tract through Bozeman's tube, which tube he prefers to Molesworth's, or any other with which he is acquainted. If offensive matter oozes or is discharged from the womb, dilate the os uteri; and with the curette remove all remnants of afterbirth, clots, or other offending matter. Sometimes he has been astonished at the large amount of discharge thus removed.

Dr. B. B. Temple, of Danville, Va., asked whether or not Dr. Parvin regards it safe for a physician attending a case of scarlet fever or erysipelas, etc., to go directly from such a patient to a woman in labor?

Dr. Parvin replied that a physician can communicate septicæmia to a puerperal woman unless thorough aseptic precautions be taken; for the germs of the one disease may be *associated* with the germs of

the other. Hence, he would repeat, let all attendants upon a puerperal woman be required to be thoroughly aseptic. Many years ago, in his practice, a man was wounded in the abdomen, and died. A professional friend of his, while making the post-mortem, wounded his finger, and died of "dissecting wound poison." Dr. Parvin attended him in his fatal illness. At the same time, he had several cases of labor on hand, and all of the patients that he delivered died of puerperal septicæmia.

DR. J. SPOTTSWOOD WELLFORD, of Richmond, Va., asked Dr. Parvin, in view of the facts he had mentioned, if it would not be scientifically more correct for him to say that the puerperal condition is necessary in order to produce the disease?

DR. PARVIN replied that perhaps that would be the best form of statement.

DR. HUNTER MCGUIRE, of Richmond, protested against the cross-fire of questions to which Dr. Parvin was subjected. The question under discussion, which was a debatable one, was so far unsettled; and it was scarcely fair to expect an answer to the direct and categorical questions to which his friend was being subjected. For himself, he thought there were many points which could only be determined by future observations; that it would require the combined experience of many observers to determine these mooted questions, and the personal observations of no one man would be sufficient.

He believed that a woman after child-birth was a good deal like a woman after a surgical operation—they were both liable to similar dangers. A very common danger in both is septic poison. This septic poison is the result of fermentative changes going on in dead matter only. This dead matter may be a piece of placenta, or extravasated blood. It is generally the latter. Fermentation taking place, we will suppose, in a mass of extravasated blood, produces inflammation and suppuration; and when a portion of this is absorbed, it produces constitutional symptoms which we call septic poison. Dr. McGuire does not believe that this clot should have access to the air in order to undergo these putrefactive changes, and produce blood poison. He had opened, as every other surgeon has, abscesses which had followed contusions, when extravasated blood had undergone fermentative change, and when air had had no possible access, and had let out, by incision, fetid pus, blood, and broken down tissue.

Many a woman has puerperal septicæmia which may be explained in this way. The contusion during child-birth is often severe. We find blood extravasated in large quantities in the parts about the uterus and vagina—sometimes a great thrombus in the vulva; it may be without breach of mucous or cutaneous membrane, and under these circumstances, if her general system is depraved, fermentative change may take place and end in septicæmia. He can readily see, too, how the introduction of the poison of scarlet fever, erysipelas, etc., would render the unhealthy inflammation and suppuration all the more likely to occur—not that these diseases set up a distinct and separate poison, but provoke into greater intensity any inflammation already impending.

He thought it was important to distinguish between the septic poison which he described, and the process of infection. He did not think from what he had heard to-day that this distinction was always made. The latter process involved the living tissue, not the dead matter; and micro-organisms, parasitic in character, are developed. The names of Pasteur and Lister would go down to history to the latest generation, the first for his discovery of micro-organism, which the air, as a vehicle, conveys to wounds; and the latter for the changes he has wrought in practical surgery.

In midwifery he thought, as in surgery, cleanliness was the most important thing to observe. Get rid of the blood which, when dead and decomposing, was so dangerous. Dr. Parvin tells me that he will remove an ovarian tumor to-morrow, and I know that his greatest care will be to remove from the abdomen of the patient, as carefully as he can, every drop of blood which has escaped into it; and if this is impossible, to render aseptic any which is left, to prevent, if possible, its fermentation and putrefaction.

Other remarks on the subject were made by DRS. J. HERBERT CLAIBORNE, of Petersburg, WILLIAM C. DABNEY, of the University of Virginia, R. A. LEWIS, of Richmond, and others, going to show that other diseases than puerperal septicæmia (such as surgical septicæmia, diphtheria, erysipelas, etc., as well as retained membranes undergoing decomposition, etc.), might give rise to puerperal septicæmia.

DR. JOHN F. WINN, of Richmond, read a paper on

INTUBATION OF THE LARYNX IN DITHTHERIA AND MEMBRANOUS CROUP AS A SUBSTITUTE FOR TRACHEOTOMY.

After considering the difficulties attending tracheotomy, and its high rate of mortality, he stated generally that the favorable results, so far, indicated that intubation would supersede tracheotomy in the conditions named. Mentioning the recent modifications in the tubes, he described the manner of their introduction, and followed with the statistics as far as could be obtained up to the time of reading his paper. These embraced the published reports of Dr. O'Dwyer's cases, in New York, Dr. Waxham's, in Chicago, and those of others. A recent letter from Dr. O'Dwyer reports fifty cases with recoveries—one in four. Dr. Waxham, in a private letter of October 23, 1886, reported thirteen new cases, with six recoveries, which, added to his published cases, make a total of ninety-six cases, with twenty-nine recoveries—30.20 per cent. One of these recently cured cases was an infant, aged nine months. Dr. Waxham says, in his letter to Dr. Winn: "I hope you will correct the impression that intubation is performed early. I have never known tracheotomy to be performed under more discouraging circumstances than has intubation, from the first to my last patient." Dr. Winn concluded his report by citing eleven propositions in favor of intubation over tracheotomy, and expresses the belief that we have every reason to regard O'Dwyer's method as a great advance in the treatment of diphtheria and croupous stenosis, and that we, as a profession, must not forget our indebt-

edness to Drs. O'Dwyer and Waxham for their labors in perfecting this operation.

Dr. H. M. Clarkson, of Hay Market, read a paper on

CHLOROFORM AND CHLORAL IN CHILD-BIRTH,

recording many useful clinical experiences, and concluding with a statement of his conviction that the physician who now would withhold these agents to annul or lighten the throes of labor is either culpable of neglect of obvious duty, or else shows himself to be ignorant of facts with which he should be familiar.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Movements of the Heart and Intestines—Operations for Internal Obstructions—Krackowitzer Prize—Building Fund for the Academy—Abscess of Brain from Suppurative Otitis—Cystic Tumor of Labium.

At the first November meeting of the Academy of Medicine, Dr. William Gilman Thompson exhibited a remarkable series of photographs illustrating the "Movements of the Heart and Intestines." Several years ago, he said, he had been much interested in reading the account of a series of photographs of horses taken while the animals were in motion, and this had suggested to him the practicability of securing similar views of the heart under various conditions. Carrying this idea out, he had been enabled to take photographs of the hearts of different kinds of animals while performing their movements naturally and under the influence of various stimuli. In his early experiments he employed an ordinary camera; but more recently he had devised a form of apparatus which rendered the work much easier as well as more accurate. The difficulty about the ordinary camera was, that only one view could be taken at a time, and then the plate had to be changed. By the aid of his improved apparatus, however, he was able to take no less than six successive views on the same plate in the space of one second; a feat in photography which he said had never before been achieved. The problem was to revolve the plate, which was circular, and stop it six times in the second; and this he had succeeded in accomplishing by means of an arrangement of cog-wheels turned by a handle. Each image was clear and distinct, without any blurring.

The animal whose heart was to be photographed was placed on a convenient platform, and anæsthetized, and an incision having been made in the median line, the heart was exposed. A collar of celluloid was then slipped behind it in order to secure a light background, which was a matter of no little importance. The light used was strong sunlight and the animals experimented upon were cats, kittens, rats, pigs and pigeons. The results were very interesting, and the various changes in the form and position of the heart were distinctly shown. The shape of the apex was found to be greatly affected by different drugs, and of the various stimuli employed, heat produced the strongest systole. Of the drugs, glonoin (either painted over the surface or used hypodermically), was active in effecting a strong systole, and chloral in producing an equally marked diastole. In photographing the movements of the intestines the same methods were employed. He had been able to demonstrate positively that two peristaltic waves sometimes occurred moving simultaneously in opposite directions; although the preponderance of motion was towards the anus.

In summing up his observations, Dr. Thompson alluded to the accuracy of the photographic method which he had devised, the rapidity and ease with which data for scientific conclusions could thus be accumulated, and the facility with which the action of various cardiac and intestinal stimuli could be illustrated before classes of students. In regard to the movements and form of the heart he spoke of the following points:

1. The long diameter may or may not shorten in systole; but it usually shortens from one-fifth to one-thirteenth.

2. The transverse diameter usually shortens at least one-fourth.

3. The apex does not in all cases cause the impulse-beat; and this very frequently is produced by the hardened anterior wall of the heart pressing against the thoracic walls. The form of the apex varies greatly under the influence of different drugs.

4. The contractile force of the right ventricle may out-last that of the left, and pathologically the two ventricles may contract independently.

5. The lumens of the ventricular cavities are capable of being entirely occluded by the circular fibres acting independently of the longitudinal and transverse; thereby demonstrating the immense contractile power in all the cardiac fibres.

On the same evening Dr. W. Gill Wylie reported two operations for intestinal obstruction. The first was in a case of total obstruction in a patient 50 years of age. On the 10th of October last he performed laparotomy, and it was found that the cause of the obstruction was a strong band of adhesions which held a loop of the ileum so firmly down that the lumen of the gut was completely destroyed. When the band was cut, however, the lumen was at once restored. The cause of the adhesions was peritonitis, which seems to have been set up by the paasage of a uterine sound; the uterus and both broad ligaments being involved in a large fibroid. A point of interest in connection with this case was the existence of normal temperature and pulse, notwithstanding that such a grave local condition was present; the intestines in the vicinity of the obstruction being turned completely black. Dr. Wylie said that he was convinced that many cases of laparotomy were followed by more or less intestinal obstruction, which was generally mistaken for peritonitis. Until very lately it had been the universal practice to keep the bowels confined for five or six days after laparotomy, notwithstanding the occurrence of tympanites

and vomiting. He would not go so far as the well-known laparotomist who had declared that a brisk purge was the best treatment for peritonitis; but he felt sure that a turpentine or ox-gall enema was often of great service after abdominal section. He had adopted the plan, he said, of always opening the bowels after the first twenty-four hours, if there was any indication for it; and in all cases he did this at the end of three days, at all events. In the case in question, ten hours after the operation the patient had a copious liquid stool, and now, three weeks afterwards, the bowels were freer than they had been for ten years before. The other case was one of partial intestinal obstruction, and laparotomy was resorted to with an equally good result.

Dr. Wylie also related four other cases, in which he had performed laparotomy, which were not gynecological. One was a case of suppurative peritonitis, one of cancer of the liver, and two of tubercular peritonitis. In all but one an exploratory incision was made, and the diagnosis was not determined until after abdomen had been opened. In the two cases of tubercular peritonitis he left a drainage-tube in position as long as there was any fluid to come away, and he said that in Germany permanent drainage had also recently been resorted to in this affection with great relief to the patient. He then went on to remark that in a large number of cases of abdominal dropsy exploratory laparotomy was far less dangerous than tapping; and he contended that laparotomists in this country could never succeed in obtaining as good results as European operators as long as the mischievous practice of tapping continued in vogue. Patients with ovarian tumors, on account of the temporary relief afforded them by tapping, are very apt, he said, to defer applying to competent operators for their removal until a stage of exhaustion had been reached which rendered the chances of recovery very meagre.

On this occasion also the President, Dr. A. Jacobi, as Chairman of the Committee upon the Ernst Krackowitzer Prize Fund, the accumulated interest of which is available every third year as an award for an original essay, announced that the first subject selected was "New Observations on Osteo-Myelitis," and that competing essays shonld be sent in on or before the first day of January, 1889. The Committee of Award will consist of the Presidents of the New York Academy of Medicine, of the Bellevue Hospital Medical College, of the Medical Department of the University of the City of New York, and of the College of Physicians and Surgeons, unless the Academy should otherwise direct.

By an amendment to the by-laws adopted at this meeting a building fund for the Academy was established, and the amount which will shortly be available for this purpose from recent bequests and donations, including the munificent gift of $25,000 from Mrs. Anna Woerishoffer, is about $100,000.

At the first autumn meeting of the New York County Medical Association, Dr. F. Van Fleet presented the specimens from, and made some remarks upon, a case of "Abscess of the Brain from Suppurative Otitis." The lesson which the case taught was, that if the ear trouble had been properly attended to in the beginning, the abscess (which was located in the left hemisphere of the cerebellum), would probably not have developed, and the child's life thus been needlessly sacrificed.

Dr. J. W. S. Gouley then exhibited a "Cystic Tumor of the Left Labium Majus" removed from a patient 30 years of age. It had distended the entire labium, and appeared to be a hypertrophied and dropsical vulvo-vaginal gland. Much skill was shown by Dr. Gouley in the careful dissection of the entire growth, which extended for about an inch under the ramus of the ischium, and in the removal of which it was necessary to divide several branches of the pubic artery.

P. B. P.

BOOK REVIEWS.

A SYSTEM OF PRACTICAL MEDICINE. By American Authors. Edited by WILLIAM PEPPER, M.D., LL.D., etc. Assisted by LOUIS STARR, M.D., etc. Volume V, Diseases of the Nervous System. 8vo., pp. 1326. Philadelphia: Lea Brothers & Co. 1886.

With this volume is concluded a task which reflects credit on the Editor, his Assistant, the contributors, and on the publishers of the System of American Medicine, as it has been called. The plan of the work, as originally announced in the prospectus about five years ago, has been strictly adhered to, though some of the most able contributors have passed away in that time. The whole number of articles is 185, by 99 authors, and covering, with the copious indices, about 5600 pages. As a whole the work is one of which Americans may well be proud; subjects have been treated in a practical manner, and in one representative of the American School of Medicine.

The fifth and last volume, on Diseases of the Nervous System, opens with an exhaustive article on the "General Semiology of Diseases of the Nervous System; Data of Diagnosis," by Dr. E. C. Seguin, who is also the author of the second article on "The Localization of Lesions in the Nervous System," the two articles covering 80 pages. One could not, perhaps, find a better introduction to diseases of the nervous system than these two articles. To the great majority of general practitioners diseases of the nervous system constitute a bugbear of medicine; or they may be looked upon as a great ocean on which the practitioner and his patient get afloat without chart or compass. Within five pages Dr. Seguin has admirably embodied the principles of diagnosis in nervous disease. In 105 pages Dr. Charles F. Folsom, of Boston, deals with "Mental Diseases." Dr. Charles K. Mills contributes the articles on "Hysteria," "Hystero-epilepsy," "Catalepsy," and "Ecstasy," and "Progressive Unilateral Facial Atrophy." Of these the first are more particularly interesting to the general practitioner, and are not only interestingly written, but are all that could be desired as thorough discussions of these subjects. "Neurasthenia" covers only nine pages, and we could wish that Dr. H. C. Wood had made more of

it; but on reading it one can scarcely see how the subject could have been presented in a more terse or able manner. Dr. Wood also contributes the articles on "Acute Affections produced by exposure to Heat," and on "Syphilitic Affections of the Nerve-Centres." Dr. Wood has done more to enlighten us on the subject of the effects of heat on the system than any other man; and many practitioners will remember with pleasure his writings on the subject of syphilis of the nervous system.

Dr. Henry M. Lyman contributes the article on "Sleep and its Disorders." The appearance of an admirable little book on "Insomnia" about a year and a half ago, from the pen of Dr. Lyman, testified to his ability to write well on this subject. Dr. Wharton Sinkler, of Philadelphia, is the author of the following articles: "Headache," "Tremor," "Chorea," "Athetosis," and "Paralysis Agitans." In 13 pages Dr. S. Weir Mitchell gives a most excellent summary of what is known of vertigo. Dr. Allen McLane Hamilton writes the articles on "Local Convulsive Disorders," and "Epilepsy." Dr. Morris J. Lewis, of Philadelphia, contributes the articles on "The Neural Disorders of Writers and Artisans." We are glad that under the prophylactic treatment of writer's cramp mention is made of the type-writer. The use of this machine by writers is not only an efficient preventive against writer's cramp, and the neural disorders of writers, but is a direct prophylactic measure against certain neural (?) disorders of editors caused by reading illegible manuscripts. Of course over-use of this instrument might cause the same trouble as that seen in piano players; but it should be remembered that this machine does about three times the work of the pen in the same time, and with not half so much fatigue to the whole body or any part of it. The articles on "Tetanus" is by Dr. P. S. Conner. Dr. Edward P. Davis writes of the "Disorders of Speech." Dr. James C. Wilson contributes the articles on "Alcoholism," "The Opium Habit and Kindred Affections," and "Chronic Lead-Poisoning." These three articles are worthy of a more extended notice than we can possible give.

Dr. Francis Minot, of Boston, contributes the articles on "Diseases of the Membranes of the Brain and Spinal Cord," "Tubercular Meningitis," "Chronic Hydrocephalus," and "Congestion, Inflammation, and Hæmorrhage of the Membranes of the Spinal Cord," the last of which probably contains more that is actually new to the general practitioner. The article on "Spina Bifida," by Dr. John Ashhurt, is written in his usually clear and terse style. Dr. Spitzka has well sustained his reputation in his articles on "Anæmia and Hyperæmia of the Brain and Spinal Cord," and "Chronic Inflammatory and Degenerative Affections of the Spinal Cord." Dr. William Hunt, of Philadelphia, contributes the article on "Concussion of the Brain and Spinal Cord," and it is the only unsatisfactory article in the volume. In an exhaustive article Dr. Robert T. Edes treats of "Intracranial Hæmorrhage and Occlusion of the Cerebral Vessels, Apoplexy, Softening of the Brain, Cerebral Paralysis." Dr. H. D. Schmidt, contributes articles on "Atrophy and Hypertrophy of the Brain," "Disease of One Lateral Half of the Spinal Cord," and "Progressive Labio-glosso-laryngeal Paralysis." With Dr. James Hendrie Lloyd, Dr. Mills again contributes two articles, on "Tumors of the Brain and its Envelopes," and "Tumors of the Spinal Cord and its Envelopes." In the first is a table of one hundred cases of brain tumor, and in the second a table of fifty cases of tumor of the spinal cord. The exhaustive paper on "Infantile Spinal Paralysis" is from the pen of Dr. Mary Putnam Jacobi. Dr. Francis T. Miles, of Baltimore, contributes an interesting article on "Diseases of the Peripheral Nerves." In his article on "Neuralgia" we are glad to note the value which Dr. James J. Putnam gives to large doses of quinine, especially when the element of periodicity can be noticed. The concluding article is by Dr. M. Allen Starr, on "Vaso-motor and Trophic Neuroses," this rather obscure subject being handled in a satisfactory manner, considering the little that is actually known.

ILLUSTRATIONS OF UNCONSCIOUS MEMORY IN DISEASE, including a Theory of Alteratives. By CHARLES CREIGHTON, M.D., 8vo., pp. xv—212. New York: J. H. Vail & Co. 1886.

The typography and binding of this book are good. There seems to be no good reason, however, why they should have been applied to this particular book, which has nothing else to recommend it. What little of good there is in it may be much more conveniently found in other works. Its absurdities sometimes rise to the ridiculous, and thus become amusing.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

HEALTH IN MICHIGAN FOR OCTOBER, 1886.—For the month of October, 1886, compared with the preceding month the reports indicate that diphtheria, bronchitis, and scarlet fever increased, and that diarrhœa, dysentery, cholera morbus, cholera infantum, decreased in prevalence.

Compared with the preceding month, the tempera-

ture in the month of October, 1886, was considerably lower, the absolute and the relative humidity, and the day and night ozone were less.

Compared with the average for the month of October, in the years 1879–1886, cholera infantum was more prevalent, and intermittent fever, remittent fever, typho-malarial fever, pneumonia, consumption of lungs, and bronchitis were less prevalent in October, 1886.

For the month of October, 1886, compared with the average of corresponding months for the eight years 1879–1886, the temperature was about the same, the absolute humidity was slightly lower, the relative humidity was the same, and the day and the night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of October, 1886, at sixty-three places, scarlet-fever at thirty-eight places, typhoid fever at forty-three places, measles at six places, and small-pox at one place.

Reports from all sources show diphtheria reported at six places less, scarlet fever at eight places more, typhoid fever at seven places less, measles at five places less, and small-pox at two places less in the month of October, 1886, than in the preceding month.

MEDICAL ASSOCIATION OF CENTRAL NEW YORK.—The nineteenth semi-annual meeting of this Association will be held at Rochester, on Tuesday, Nov. 16, at 10 o'clock A.M., under the Presidency of Dr. J. P. Creveling. All members of the county societies in jurisdiction are invited to be present, and participate in the work.

The following proposed amendment to Article 2 of the constitution, offered by Dr. Kendall at the last semi-annual meeting will come up for action:

Article 2.—The Association shall hold an annual meeting on the third Tuesday of May, which shall be held in Rochester and Syracuse on alternate years.

The officers of the Society shall have power to call a special meeting either at Rochester or Syracuse, at any time should circumstances demand such meeting.

The following papers are promised:

Details of Gynæcological Treatment, by H. W. Streeter, M.D., Rochester; *Scarlet Fever and its Treatment*, by Wm. B. Alley, M.D., Nunda; *Four Cases of Lapero-Hysterectomy*, Ely Van de Warker, M.D., Syracuse; *Nephro-Lithotomy*, W. S. Cheeseman, M.D., Auburn; *Tinnitus Aurium in General Practice*, M. A. Veeder, M.D., Lyons; *Pregnancy Nephritis*, E. R. Armstrong, M.D., Holley; *The Dangers Attending the Prolonged Retention of the Tracheotomy Tube*, J. O. Roe, M.D., Rochester.

J. N. ARNOLD, *Secretary*.

INTER-STATE NOTIFICATION IN INFECTIOUS AND CONTAGIOUS DISEASES.—In addition to the resolutions presented by the National Conference of State Boards of Health and adopted by the American Public Health Association, the following from the Advisory Council of the Association were also adopted.

WHEREAS, it is necessary for the protection and preservation of the public health that prompt information should be published of the existence of cholera, yellow fever and small-pox.

1. *Resolved*, That the American Public Health Association believes it to be the duty of each State and provincial board of health within whose jurisdiction one of these diseases shall appear, to give immediately notice of the existence of the same to neighboring State and provincial boards of health, and to the boards of towns and cities in neighboring States and provinces which have no central board. In such States and provinces this duty of notification lies upon the local boards.

2. *Resolved*, That it is the sense of this Association, that whenever rumors of the existence of pestilential disease in a State or province prevail, and, upon application to the health authorities of said State or province, information respecting the truth of the rumor is refused, the health officials of another State or province are justified in entering the before mentioned State or province for the purpose of investigating and establishing the truth or falsity of such rumor.

In conducting the investigation, every reasonable effort should be made to coöperate with the health authorities of the locality.

3. *Resolved*, That a case which so nearly resembles one of the specified diseases as to raise a reasonable suspicion of its character, or a case in which concealment is attempted, ought to be reported as a suspected case, in the same manner as if the diagnosis were certain.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 30, 1886, TO NOVEMBER 6, 1886.

Major B. A. Clements, Surgeon, died Nov. 1, 1886, at Ft. Leavenworth, Kansas.

Major J. V. D. Middleton, Surgeon, ordered from Dept. Mo. to David's Island, New York Harbor.

Major A. A. Woodhull, Surgeon, ordered from David's Island, New York Harbor, to Dept. Mo.

Major J. W. Williams, Surgeon, ordered from Dept. Col. to Dept. East.

Capt. J. K. Corson, Asst. Surgeon, ordered from Jefferson Bks., Mo., to Dept. Col., upon expiration of present leave of absence.

Capt. H. S. Turrill, Asst. Surgeon, ordered from Dept. Platte to Dept. Col.

First Lieut. Benj. Munday, Asst. Surgeon, ordered from Dept. Col. to Jefferson Bks., Mo. (S. O. 252, A. G. O., Oct. 29, 1886.)

First Lieut. Wm. O. Owen, Jr., Asst. Surgeon, relieved from duty at Ft. Schuyler, N. Y. H., and ordered for duty as Post Surgeon, Plattsburg Bks., N. Y. (S. O. 170, Div. Atlantic, Oct. 29, 1886.)

First Lieut. Guy L. Edie, Asst. Surgeon, ordered from Ft. McIntosh, Texas, to Post of San Antonio, Tex. (S. O. 152, Dept. Texas, Oct. 27, 1886.)

First Lieut. H. S. T. Harris, Asst. Surgeon, ordered from Post of San Antonio, Tex., to Ft. Clark, Tex. (S. O. 152, Dept. Tex., Oct. 27, 1886.)

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING NOVEMBER 6, 1886.

Neilson, J. L., Surgeon U. S. N., ordered to the receiving ship "New Hampshire."

Drennan, M. C., Surgeon U. S. N., detached from receiving ship "New Hampshire" and granted one year's leave.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, NOVEMBER 20, 1886. No. 21.

ORIGINAL ARTICLES.

THE TREATMENT OF ANAL FISTULA ASSOCIATED WITH PHTHISIS.[1]

BY E. E. GLOVER, M.D.,

OF TERRE HAUTE, IND.

The surgeon who operates in the phthisical subject for fistula *in ano*, is almost certain to be placed in an embarrassing and false position if his patient makes a slow recovery. Excellent practitioners will often believe that there has been meddlesome interference, and with apparent justice, since authors in treating of fistula in conjunction with phthisis have generally taught that operative interference is unwise, as certainly resulting in injury to, or often hastening the death of the patient. This opinion has been strengthened by the fact that this has been held as an axiom of both professional and popular belief from an early day, and is probably now held by the majority of physicians. While a firm adherent to the belief in the value of operative interference in proper cases, it has been my intention to examine this subject and to impartially state the conditions of the present belief and practice of those of greatest experience; believing that by such a course I can better carry conviction than by a mere statement of personal opinion and experience. To this end I addressed letters of inquiry to members of the profession, and have been favored with a response so general, so widely distributed, and from many of such professional eminence, that it is but just to say that it reflects the views held at present by the representative men of the profession in the United States. In only one instance do I give the opinions of a foreign surgeon. Mr. Allingham, the distinguished rectal surgeon of St. Mark's Hospital, London, has given his views, and being of more recent date than his published writings, I do not feel that they should be suppressed.

The exact number of cases reported cannot be given, many having kept no notes, but can be safely placed at above 2000.

Question 1—Were you satisfied with the results in these cases? This is answered in the affirmative by D. Hayes Agnew, John Ashhurst, Jr., John H. Brinton, J. Solis-Cohen and S. W. Gross, Philadelphia; Robert Battey, Rome, Ga.; R. B. Bontecou, Troy, N. Y.; R. Beverly Cole and Levi C. Lane, San Francisco; George J. Cook and Joseph Eastman, Indianapolis, Ind.; Edward Borck, Geo. J. Engelmann, E. H. Gregory and T. F. Prewitt, St. Louis; Frank H. Hamilton, Charles B. Kelsey, Louis A. Sayre and J. Williston Wright, New York; Moses Gunn and Alfred S. Houghton, Chicago; Henry O. Marcy, Boston; C. H. Mastin, Mobile, Ala.; Jos. M. Mathews, Louisville, Ky.; Richard C. Moore, Omaha, Neb.; A. M. Owen, Evansville, Ind.; N. Senn, Milwaukee, Wis.; J. N. Taylor, Corinth, Miss.; Theodore R. Varich, Jersey City, N. J.; James T. Whittaker, Cincinnati, O.; J. S. Wight, Brooklyn, N. Y.

Edmund Andrews, Chicago, Hunter McGuire, Richmond, Va., W. F. Peck, Davenport, Ia., Thaddeus R. Reamy, Cincinnati, O., and J. C. Wilson, Philadelphia, answer, yes, as a rule. Borck: yes, and so were the patients. Varick: In every case benefit has resulted. Allingham: I have operated in many hundreds of cases with good results, due precautions being observed as to bad weather, constant cough, or far advanced disease. Sayre: I have operated on a very large number of cases who were far advanced in phthisis. In every instance the operation proved beneficial. Owen: I have been so pleased with the results of the operation, that I have much to say in its favor, and nothing against it. Cook: The reasons given for opinions in opposition to operating, are various and contradictory. Alex. Y. P. Garnett, of Washington: In the majority of those operated upon the result has been satisfactory, by the removal of a painful and suppurating ulcer, so situated as to render locomotion painful, and the sitting position uncomfortable. Brinton: I have not been dissatisfied; I believe the operation proper. Samuel Logan, of New Orleans, and J. Williston Wright: Yes, as I have not operated indiscriminately. Ashhurst: I have never seen any particular harm result from the operation. Engelmann: Perfectly so for the time being; anal trouble completely relieved, but rapid fatal termination of the disease followed. Charles Denison, Denver, Col.: I have never operated, but I have not been at all satisfied with the results in the hands of others. B. F. Swafford, Terre Haute, Ind., answers no.

Question 2.—Excepting where the cough is constant or where the pulmonary disease is either rapidly advancing or far advanced, do you think it advisable to operate in this class of cases? This is answered, I do, by Agnew, Allingham, Andrews, Brinton, Wm. Brodie, Detroit, Mich., Borck, Bontecou, Solis-Cohen,

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

Cole, Cook, Francis Delafield. New York, Eastman, Engelmann, Gunn, Hamilton, E. Fletcher Ingals, Chicago, Lane, D. A. Linthicum, Helena, Ark., McGuire, Mathews, Moore, Owen, Prewitt, Peck, Reamy, Sayre, T. G. Richardson, New Orleans, and John Roberts, Philadelphia. Wight, Wilson, Varick, and Taylor: Operate early and freely. Agnew: Always cure the fistula if you can. The only question I propose to myself in operating for fistula in consumptive cases, is the following: Are the reparative powers of the patient equal to the work of healing the wound? Believing as I do that such sores have no safety-valve or derivative effect-office by which disease is attracted from the pulmonary organs, I have no hesitation in recommending that they be cured as quickly as possible. Cook: The only question to me is, the nutrition of the patient. Gunn: Yes, my experience teaches me that the cure of a fistula is not contraindicated in patients with a predisposition to, or with actually present consumption, in its earlier stages, if the proper means are taken to combat such predisposition or disease. Marcy: I believe the rationale of the older views is untenable, and because a man is afflicted with one disease to refuse to cure him of another is as irrational as it is cruel. Delafield: My own belief is, that two diseases are worse than one. Wright: Yes, on the ground that phthisis alone is better than phthisis and fistula combined. Solis Cohen: The operation is indicated on the general principle of relieving any source of irritation amenable to interference. I have not met with any unfavorable results. Kelsey: I believe it to be a safe rule to operate upon phthisical patients as upon others, being led by the idea that one exhaustive disease is better than two. No cautious practitioner would think of operating in either rapidly advancing or far advanced lung trouble. Cook: I have never yet had occasion to regret an operation, but have seen very great benefits result from checking the discharge. Ingals and Wright: Yes, the patient is more comfortable. Brodie: I can see no objection to operating if the patient has phthisis. Gregory: If the fistula give much discomfort I operate. I always operate when the disease annoys the patient. I should treat as under ordinary circumstances. Ashhurst: I do not operate unless the distress and annoyance from the local affection are greater than from the constitutional condition. Senn and Whittaker: If the disease is attendant with pain and discomfort.

Dr. Andrews says: If the irritation and discharge be slight, and the patient is liable to die in a year from phthisis, there is no very strong motive to submit to an operation. There is no ground on which one can strongly urge an operation to a phthisical patient. Battey: If the patient is suffering locally, yes—if not—no. Logan: Yes, but not where fistulous sinuses are very numerous or extensive, especially if the patient be weak. Garnett: I would not advise surgical interference in the early or incipient stages of phthisis, unless the local trouble occasion great inconvenience and pain, the chief object of the operation being to remedy these. Gross: My rule of practice has been to operate if the lung symptoms were slight, and the fistula gives rise to much annoyance or local distress. Allingham: I consider reckless operating very harmful, the wounds will generally heal, but the low reparative power makes healing a lengthy process; breaking down of the parts often takes place. The cough I consider very harmful, as this occurs in or during other conditions not phthisical. Matthews: It must be born in mind that there is a vast difference in fistulæ. Some may exist for years even in consumption, and cause but little distress, others are progressive and destructive, and if left alone will do incalculable harm in a very short time. Again, a very small sinus, if situated in proximity to the sphincter, will cause great pain that can only be relieved by an operation. Marcy: I have for years advocated and performed operations for the cure of fistula in consumptives. Devitalization by disease renders one a poor subject for surgical repair. Nevertheless, I have, as a rule, seen tuberculous subjects operated on do well and improve generally after being cured of another and a serious infirmity; locally a cause of suffering and a drain upon the health. Denison, Roberts, and Swafford, answer, I think not.

Question 3. Do you think that you would operate in cold or damp weather, when the patient must be confined to his room? Andrews, Brinton, Solis-Cohen, Eastmann, Houghton, Owen, Roberts, Swafford, Senn, Varich, Whittaker and Wilson answer: I would operate at any time. Bontecou and Gregory: Should not be very particular as to the time. Garnett: The weather would not enter into consideration with me as an important factor, except that of extreme heat. Andrews: Yes, better confine him for a few days anyhow. Gregory and Reamy: Yes, if the case demanded immediate relief. Mastin and Wright: I would prefer to wait for good weather, in order to avoid the dangers incident to confinement in such cases. Cole and Cook: In winter I would prefer to wait until spring. Borck, Cohen, Linthicum, McGuire, Peck, Prewitt, Taylor and Wight: I would prefer clear dry weather. Mathews: If it was a progressive one and caused great pain and inconvenience, I would operate with this disadvantage present. Roberts: I think not. Logan: Not as a rule. Allingham, Battey and Engelmann: No, I would not.

Question 4. Will the wounds heal in nearly every case? If not, why? From low reparative power, because of the concussion from coughing or what reason? Andrews, Allingham, Battey, Bontecou, Borck, Brinton, Cole, Cook, Eastman, Engelmann, Gregory, Garnett, Hamilton, Houghton, Ingals, Mathews, Mastin, McGuire, Moore Owen, Prewitt, Peck, Reamy, Sayre, Senn, Taylor, Varich, Whittaker, Wilson and Wight, answer, yes. Battey and Sayre: Yes, it has never failed me. Bontecou and Logan: Unless the patient is reduced too low. Engelmann: They seem to heal as well as in other cases, especially if the operation is done antiseptically. Senn: Yes, if the operation is thoroughly done. Owen: I have had several cases where the cough was so constant that sleep was not known without opiates, that were relieved by the operation. Kelsey: Cough

when violent and frequent is a decided contra-indication, interfering as it does, very certainly with the healing of the wound. Ingals: Yes, when done early in the disease. McGuire: The wound is healed kindly unless the disease is advanced and the powers of life low. Allingham: They heal slowly, but generally heal in my cases. Hamilton: They heal slowly. The fact is, there is some danger that they may never be made to heal. Cook: I think that there is but one question to decide in order to determine the propriety of an operation; that is the question of nutrition. If the nutrition is good it will, and the operation will be a benefit to the patient not only as to the local distress, but also as to the general health. Garnett: The wounds in all the cases that have come under my observation have healed but one. Where the disease is far advanced and a cacoplastic condition of the fluids exist, one may reasonably expect the reparative process to be imperfect and difficult. Gross: A failure to heal depends first upon the low reparative power, and secondly upon the fact that the tissue lining the fistulous tract is tuberculous. Linthicum and Reamy: If retarded, I think first, because of the impaired vitality, but oftener from concussion of coughing. Mastin: I always try to allay the cough before operating. Andrews: Sometimes will not heal in consequence of tubercles about the rectum slowly ulcerating away. Ashurst: The wound is apt not to heal. Denison: The wounds will not heal readily. Kelsey: The sphincters should be interfered with as little as possible, as they are apt to be weak at the best. Allingham: The muscles should not be divided; they almost never want it. Andrews, Cook, Engelmann, Garnett, Gregory, Logan, Mastin, Sayre and Taylor, answer that they do not often fail to unite.

Question 5.—That the suppression of the discharge is positively beneficial? Is answered I do, or yes, by Brodie, Bontecou, Brinton, Solis-Cohen, Cole, Cook, Eastman, Houghton, Logan, Mathews, McGuire, Owen, Prewitt, Senn, Taylor, Varick, Whittaker, Wilson and Wight. Brodie, Varick and Wilson would operate on the general principle that they would close another drain on the constitution and thereby save strength. Reamy: I believe so. Roberts: Don't know that it has any effect. Sayre: I am positive of the fact. Wright: Indirectly, yes, by relieving the system of one source of irritation and exhaustion. Hamilton: The purulent discharges in these cases are often excessive and exhausting, and the continuance of the fistula provokes intestinal irritations causing tenesmus and diarrhœa. Peck: Yes, in favorable cases. Gregory: I suppose it advantageous. Mastin: Not beyond the local comfort of the patient. Linthicum: In advanced cases I think not. Borck: As far as comfort concerns. Allingham and Swafford: I cannot say this. Andrews: The discharge is usually too small to have a perceptible effect, but suppression of large discharges is beneficial. Battey: Doubtful. Garnett: The discharge, unless excessive or profuse, should in no case be arrested after the disease is fully established, unless precaution be taken beforehand of establishing a seton or issue in the arm or some other eligible point, as a substitute for the conservative irritation exerted by the suppurating fistula. This plan I have invariably adopted. Blisters, setons and issues demonstrate in our daily practice this compensative sympathy which binds the intrical parts of the human system enabling each to coöperate, under certain conditions, in conserving the whole and maintaining its integrity. Hamilton: If there is any probability that the fistula has served a useful purpose as a derivative, it is much better to place an issue in the arm or in some other part of the body, rather than permit the continuance of the fistula. Linthicum: I would make an issue somewhere in the neighborhood of the diseased lung, keeping it open at least until the wound healed, in order to prevent a sudden termination from the fistula to the lung. Reamy: Modern views as to etiology and pathology of phthisis render the old views of benefit from counter irritation impossible. On the contrary, it can only exhaust strength, and hasten the fatal issue. Sayre: The suppression of the discharge will never increase the pulmonary trouble if you put an issue in the arm or some other part of the body, in cases in which it is necessary. Cook: When phthisis becomes worse after an operation, I believe it is not checking the discharge which causes it, but generally is an improper or careless treatment of the patient before, during, or after the operation. One who has phthisis is very sensitive to changes which others would not notice. It is strict attention to the details of treatment, both general and local, that brings success in these cases. Kelsey: Only once has it happened to me to see the cure of fistula followed by a marked increase of the lung trouble; and even in such a case the relation between the cause and effect cannot be established. Engelmann: I have seen it apparently increase the pulmonary trouble. Denison and Rochester: Have seen injurious and even fatal results follow the suppression of the discharge, but in the hands of others.

Question 6.—That the operation tends to retard or arrest the progress of the disease and to prolong the life of the patient? Battey, Bontecou, Brodie, Solis-Cohen, Cook, Eastman, Houghton, Kelsey, Linthicum, Mathews, McGuire, Moore, Owen, Prewitt, Reamy, Roberts, Sayre, Senn, Taylor, Varick, Wight and Wright answer, I do. Sayre: I am certain it does. Hamilton: It often does. Peck: Yes, in favorable cases. Moore: Have undoubtedly seen life prolonged by the operation. Wight: Retards as a rule. Mathews: I do, for the reason that if a good result is obtained, a great drainage is stopped, and also that nervous irritation ceases. Battey: Yes, as the patient is thereby enabled to take air and exercise. Agnew and Allingham: Retards if proper precautions are taken. Hamilton: It has happened to me in several instances to witness a marked improvement in the general condition of tuberculous patients when a cure of the fistula has been effected. Garnett: I do not believe that the operation exerts any influence in regard to arresting the disease, unless the discharge be excessive. In that event the arrest of it could negatively check the progress of the dis-

ease. Cole: It may retard but not arrest the disease. Reamy: Yes, I am of the opinion that any suppurating point, as a fistula in ano, may serve to drain away the vitality of the patient, as well as act as a nidus of distribution for the bacilli of tuberculosis. Senn: Yes, but not in all cases. Mastin: Indirectly, by removing a source of annoyance which lessens the powers of resistance by lowering the vital forces. McGuire: Tends to retard the progress of the disease, as prolonged suppuration provokes tubercular disease. Brinton and Sayre: I think it retards the disease, inasmuch as it improves the general health by removing one source of drain, and places the patient in a better condition to arrest the main disease, phthisis. Logan, Prewitt and Wilson: To the extent that it removes one cause of general debility. Whittaker: The fistula in this case falls among the local expressions of tuberculosis, every one of which should be treated and cured if possible. Gross: In confirmed cases of tuberculosis of the lungs the fistula rarely heals unless the entire tuberculous granulative tissue be thoroughly removed by the knife or spoon. Senn: I consider the local trouble tubercular in such cases, and would urge thorough removal of granulations with sharp spoon and actual cautery, and to always use Paquilin's cautery in place of the knife. In all cases except where the pulmonary disease is far advanced and the patient debilitated, I would operate, believing that operation adds to length of life and comfort of patient. McGuire: The organized matter lining the fistula should be cleanly cut away and the wound closed when it is practicable, with sutures, and union by the first intention obtained if possible. It can often be done. Gunn: The cure of the fistula is one of the means to be resorted to as an aid to such cure. If associated with proper means to combat the predisposition or disease. the cure of the fistula enhances the prospect of a cure of the consumptive patient. Owen: I regard it as a valuable preventative means. Richardson: Patients seem to improve after the closure. Roberts: Retards so far as it relieves the source of discomfort. Wright: Only in an indirect manner, viz: by relieving patients of one source of much distress or annoyance. Borck, Gregory, Swafford and Wilson: Cannot say. Bontecou: I do not think the operation has any influence on the pulmonary disease, except making the patient more comfortable. Whittaker: No effect upon it. Andrews: There is no substantial proof of it. Theoretically one would expect it to do so slightly. Engelmann, Ingals, Mastin, Peck, Roberts, Senn, and and Taylor: I think not; or no. Denison and Richardson: No; life is shortened.

The answers seem to indicate that phthisical patients are less predisposed to fistula than is commonly believed. With reference to rapidly advancing cases or in the advanced stages of phthisis the general opinion is, that interference is unwise and that the life of the patient is often actually shortened. This is expressly stated by Allingham, Ashhurst, Cole, Kelsey, Linthicum, Marcy, Mastin, Prewitt, Swafford, Varick, Wight, and others. Senn, while recognizing this, says he would operate if the local trouble gave rise to much discomfort and suffering.

Under the head of general remarks Roberts says: I am inclined to think that the refusal to operate is founded upon unproven tradition. Marcy: I am very glad that you are seriously discussing the subject, since the great mass follow rules of dictation rather than independent reason. Brinton: I think that the surgeon should try and weigh probable ill and favorable results, and in proper cases give the patient the best chance. Sayre: My rule is to operate on all cases as soon as the trouble is discovered. The longer the operation is delayed the worse it will be for the patient. I would suggest to dry up all exhausting discharges, and remove all sources of constitutional irritation, so as to improve the general health in all phthisical patients.

Cook: As anal fistula is only a tubular ulcer, differing in no respect as to the discharge from it, and the effect of this on the system, from an ulcer on any superficial part with a like extent of surface, I cannot understand why it should be viewed with superstition. We do not find physicians refusing to attempt to heal any other drain or discharge from the body. Houghton: I regard all rectal trouble located on or near one of the sphincters as operating reflexly through the sympathetic system, in a most injurious and often in a varied manner similar to cervical and urethral reflex irritants. This seems to me sufficient reason for their removal. Denison: The fistula will heal or the discharge lessen in a cool, dry and elevated climate, such as is known to arrest pulmonary phthisis. Under proper treatment of the lung disease the fistula heals itself, as in two patients of my own.

General Summary.—Operative interference is advised and practiced with benefit to the patient excepting, 1st, where the cough is constant, unless this be first allayed; 2d, where the pulmonary disease is either rapidly advancing, or is far advanced; 3d, where the reparative powers of the patient are so low that they evidently are unequal to the task of healing the wound.

Although it is proper to operate during any season, preference should be given to pleasant weather, such as will allow the patient to be in the open air.

Where the tissue surrounding the fistulous tract is supposed to be tubercular, some advise its removal by the knife or sharp spoon.

The wounds heal in nearly every case in which an operation is justifiable. There should be as little interference with the sphincter muscles as possible.

The suppression of the discharge is thought to be positively beneficial.

It is recommended by some that where the discharge is supposed to have a beneficial derivative effect, that a seton be inserted in the arm or other eligible part, before operating on the fistula.

It is believed that a successful operation tends to retard the progress of the disease, and to prolong the life of the patient.

There are many cases in which this question presents itself as a subject of vital importance, and one upon which all the experience of the profession should be thrown, that the disputed points may be cleared

up and the method of treatment placed upon a clearly defined basis. I believe that the matter contained in this paper, and the conclusions deducted therefrom, may contribute to this end.

Dr. John B. Johnson, of St. Louis, in discussing the paper, said that he had in mind a number of cases where the tubercular process was hastened or aggravated by the cure of the fistula in ano, and that the tuberculosis was not a local disease, but affected the follicles of the mucous surface of the digestive tract. He considered operation not justifiable in advanced phthisis.

Dr. J. McF. Gaston, of Atlanta, thought there was no doubt about the salutary effect of operative treatment.

SOME OF THE COMPLICATIONS OF STRANGULATED HERNIA.[1]

BY R. HARVEY REED, M.D.,

OF MANSFIELD, OHIO.

I will not presume on the intelligence of the members of this Association by unnecessarily occupying time in giving the history, anatomy, or even a description of this comparatively common operation, which is doubtless familiar to us all. There are few cities in America at this time, that have not one or more surgeons who can show a record of successful operations for strangulated hernia, and who are perfectly familiar with every step in this important operation. Hence I shall confine myself to a report of some of those complications which may arise in the path of any surgeon who seeks to relieve his patients of this dreaded malady by operative interference, as illustrated by a few cases that have come under my notice.

C. S., æt. 30, a vigorous, strong, muscular stonemason. I was called in consultation with a physician of one of our neighboring towns on April 16, 1885, and found that about nine years previous to this attack, a hydrocele had made its appearance on the right side, which had subsequently been tapped and temporarily relieved. About the time the hydrocele made its appearance the right testicle was observed to be enlarging; this continued for some time, until it became more than twice its natural size, and remained so from that time on. On examination, it was found to be hard and of a fibrous character, was not painful, was adherent to the surrounding structures, and was to a great extent immovable, either voluntarily or otherwise. On further examination, he was found to have a large hydrocele on the right side, and a strangulated complete inguinal hernia.

Neither the patient or the attending physician had any knowledge of the existence of a hernia prior to his present illness, nor, in fact, then, until he commenced stercoraceous vomiting some ten or twelve hours before. After a fruitless attempt at reducing the hernia, I tapped the hydrocele and drew off over a pint of water, after which the hernia was reduced by taxis, dressed with a spica of the groin, and the patient was given an anodyne, and rest in the recumbent position enjoined.

Very much to our surprise, we were informed the next day that the patient was no better, but, on the contrary, was still vomiting fæcal matter, and gradually getting worse, owing to which they desired me to come and see him. Being so engaged as to make such a visit impossible at the time, I requested my friend, Dr. J. Harvey Craig, to go in my place. He found the hernia down, returned it without much trouble, and dressed it as before.

On the third day the same message was repeated, and we were again requested to visit him. By this time the case had become unusually interesting, and, in company with Drs. J. W. and J. Harvey Craig, I again visited the patient and held a consultation with his attending physician, only to find the same apparent condition as had previously been existing. We again reduced the hernia, and advised the attending physician to be vigilant in keeping it reduced, by carefully watching the compress and bandages, in the belief that that would give him the desired relief. Such was not the case; for the vomiting did not abate in the least, and on the fourth day the same message was repeated as before. Accompanied by Drs. Craig, Sr. and Jr., I again visited the patient and found the hernia protruding as before, which, owing to his incessant vomiting and straining, made it almost impossible to keep reduced. After a careful examinatiou, it was agreed that some concealed difficulty of the bowel existed, and that an operation to discover and relieve it was in order.

Dr. J. W. Craig being the senior surgeon, performed the operation. The incision was made along the line of the inguinal canal, from Poupart's ligament to the internal ring, and the parts carefully dissected up until the inguinal canal was exposed, but no strangulation was found. The finger could be easily passed into the abdominal cavity through the internal ring, but no constriction could be found; the opening was enlarged sufficiently to admit of a careful examination of the condition of the small intestines, which were found normal. On further examination, however, it was discovered that the ascending colon had been dragged down further than usual, until the lower end of the vermiform appendix had escaped through the opening of the femoral ring and become strangulated at a point where it passed Gimbernot's ligament. When released it was found to be swollen to the size of a man's thumb, and very much discolored; so much so as to raise the question as to the propriety of removing it. But the gradual return of its natural color soon settled that question, and it was replaced in the abdominal cavity, and the wound carefully cleansed and closed. The operation was conducted and the wound dressed under antiseptic principles. The wound healed rapidly, and the patient made a perfect recovery without a single bad symptom, and returned to his usual occupation feeling as well as ever, excepting as to the hydrocele and the enlarged testicle. the former having been tapped twice since the operation, the last time being since the preparation of this report had been begun.

[1] Read in the Section on Surgery at the Thi ty-Seventh Annual Meeting of the American Medical Association.

It will be observed, the complications in this case were: 1, a hydrocele; 2, an enlarged and adherent testicle; 3, an obscure femoral hernia, consisting in the escape of the vermiform appendix with strangulation of the same, accompanied with all the symptoms of complete obstruction of the bowel, which, not being observable externally, was rendered doubly obscure by the existence of a complete inguinal hernia, which was supposed to be the source of all the trouble. Having had the continued symptoms of strangulation for four days, notwithstanding the inguinal hernia was reducible, and no other tumor was visible, we were confident of the existence of an obstruction of some character existing in the bowel, and felt that we were justified in laying open the inguinal canal and searching for the obstruction and removing it if possible.

In vol. i, page 490, Professor Agnew says in his "Surgery": "Should symptoms of strangulation be present without any visible tumor, and there be grounds to suspect the existence of a concealed, or an incomplete inguinal hernia, the surgeon should have no hesitation in laying open the canal in order to verify or to disprove its existence."

It was my fortune to witness an operation, by our honorable chairman, for strangulated hernia, on March 30, 1885, in the Milwaukee Hospital, a full report of which Dr. Senn has kindly furnished me for this paper:

Mr. W., æt. 35, a business man, had an old inguinal hernia which had been repeatedly strangulated, and reduced by various surgeons. For twelve years the omentum has been adherent to the entire surface of the sac. The patient was etherized, and the parts cleansed with a 5 per cent. solution of carbolic acid. A vertical incision was made, extending the length of the tumor and down to the sac, which was opened, exposing the omentum. The omentum being torn from the adherent surfaces, which included the right spermatic cord, necessitated the removal of the right testicle. After the cord was tied and cut, the omentum was ligated with a catgut ligature, which was passed through the tissue, then cut, making a double ligature transfixing the stump. The omentum was then cut off, the stump sutured with catgut to the edges of the internal ring, and the hernial sac dissected out. The parts were trimmed off, leaving enough to cover the stump, and sewed together with fine catgut. The external wound was then closed by sutures, a drainage-tube introduced into the scrotum, a full Lister dressing applied, and the patient kept at rest in bed. With the exception of a slight pain in the cord, a small rise of temperature for the two following days, the patient experienced no discomfort, and was discharged from the hospital on the 20th of April, just three weeks after the operation, perfectly well.

In this interesting case, it will be observed, there was both escape of the omentum and intestine, with marked adhesions of the former, involving the cord and necessitating the removal of the testicle, and protruding parts of the omentum, producing complications of a complex character.

In 1878 I was called, in company with a colleague, to operate a young man who had a congenital scrotal hernia, which had become strangulated. The young man was about 21 years of age. Previous to this had enjoyed good health, and, with the exception of a congenital hernia for which he had never worn a truss, was a strong, muscular fellow, and used to "roughing it." The ordinary operation for strangulated hernia was performed, the patient making the usual progress in his recovery, with but slight trouble. But, notwithstanding our repeated instructions as to care and diet, he had several relapses after convalescence had set in, by eating bologna sausages, pretzels and cheese, drinking beer, and finally attempting to wheel brick on a wheelbarrow, before the external wound had closed entirely, and without any other support than that afforded by the compress and bandages, which resulted in tearing open the external wound for an inch or more, and in producing a small perforation of the protruding small intestine, with a discharge of the contents of the bowel externally. I dressed the wound, by thoroughly cleansing it with iodized water, closed the wound of the intestine with a fine silk suture, and after carefully replacing the bowel in the abdominal cavity, closed the external wound with interrupted sutures, and allowed it to heal by granulations; meanwhile keeping it cleansed with iodized water, well drained, enforcing quiet and a rigid diet on the part of the patient. He made a rapid and complete recovery without any further bad symptoms. In this case, the only complication arising in the case came on during convalescence, and was the result of carelessness on the part of the patient and friends.

Similar complications may occur in a country practice, where the surgeon has not the advantage of hospital nurses, and often the inconvenience of poverty to contend with, combined with ignorant and careless nurses, who either fail to realize or neglect to heed the surgeon's advice. While the operation for ordinary strangulated hernia is comparatively a common one, and when performed under ordinary circumstances, before it is too late, the prognosis may be considered quite favorable, yet the chances of complication are always possible, and when they do occur, the urgencies of the moment are generally great and more or less perplexing.

PEMPHIGUS CONJUNCTIVÆ.[1]

BY WILLIAM DICKINSON, M.D.,

OF ST. LOUIS, MO.

Mr. White Cooper recorded the first case in England in Vol. I of the "Royal London Ophthalmic Hospital Reports." At that time about twenty cases only had been recorded by Continental writers. Mr. Lang, of London, has recently reported two cases, which are briefly recorded in the *Ophthalmic Review*, December, 1885. Stelwag, in 1870, von Graefe, in 1878, and Steffan, recognized this affection, and have written on the subject. Dr. James A. Campbell, of

[1] Read in the Section on Ophthalmology, Otology and Laryngology at the Thirty-Seventh Annual Meeting of the American Medical Association.

this city (St. Louis), met with a case of pemphigus conjunctivæ, of which he published an account in a monograph in 1878.

On account of the rarity of this affection I am induced to report the following case, it being the first that has occurred in my practice, now embracing a period of thirty-five years.

Case.—Mrs. A. B., of *petite* figure and generally enjoying good health, applied to me in 1880 for glasses to enable her to read readily. She was then quite presbyopic, being 56 years of age, and required convex glasses $\frac{1}{12}$. There was at that time also a minute circumscribed opacity at the centre of the anterior capsule of the lens of the right eye.

In June, 1885, she applied to me for treatment of the present affection, and gave the following history, viz: "I am a widow, the mother of several children; a teacher for forty years; have never had any affection of the skin, either general or local; have experienced much sorrow by the loss by death of children and from other causes. In 1883, when in the country, both eyes became severely inflamed, and were treated by a discreet physician of the place; after treatment of five or six weeks they recovered to a good degree, but still they have troubled me very much ever since, not being able to bear strong light, and eyes often filling with water, especially during the last year. In February of the present year (1885) my eyes became much worse, more red, inflamed and watery. My family physician gave me drops to use. The left eye became first affected, and the disease seemed to locate at the inner corner, presenting a large red spot, and causing severe pain. Water blisters at the same time appeared on both upper lids. Applied flax-seed poultices. After a time the severe pain subsided, but the redness at the inner corner remained. In April (1885) I consulted an oculist in this city (St. Louis) for this affection, having at that time large water blisters on both upper lids and also on the edges. He let the water out and gave me a white salve to apply. Ordinary light was then troublesome, rendering it impossible for me to look upwards. I remained under his treatment for two months, during which time there were several alternations of water blisters occurring on the upper lids, and recoveries. The redness at inner corner of left eye somewhat disappeared, it assuming a whitish color. I do not know whether the doctor knew what was the real matter with my eyes, at any rate he did not tell me, but repeatedly assured me that I should get well. At this time the lower lids began to turn in, and the lashes to rub and irritate the eyes. The eyes then watered more than before." At the instance of a mutual friend she at this time consulted me, presenting herself first about June 25.

Present appearances.—Both upper lids drooped; a very considerable degree of photophobia and lachrymation were present; also entropion of the lower lids to some extent, and consequently trichiasis. Not only the inverted normal cilia thus irritated the globe, but also numerous fine cilia which had abnormally developed along the inner margin of the lids. The vessels of the entire sub-conjunctival tissue were highly congested. A large and wide fibrous band of whitish color, evidently cicatricial in character, was seen at the globe at the inner canthus, resembling a broad pterygium, and extending nearly to the margin of the cornea. It had all the physical characters of a cicatrix, seen as a sequela caused by some powerful escharotic. She stated, however, that nothing of the kind had ever come in contact with the eye. The punctum and canaliculus of the left lower lid were contracted; this condition was much relieved by the introduction and passage of Bowman's probes.

Having contemplated a visit into the country, immediately after this first visit she left the city. She returned, however, much sooner than she had intended, on account of the progressive pemphigus, and again came under my observation in August. The general condition of the eyes was unchanged, except as intimated, aggravated in degree, *i. e.*, entropion, trichiasis, and their consequences, photophobia and lachrymation were much increased. For the correction of these irritating causes, on August 18 I removed an oval piece of the integument from the right lower lid, this being more inverted than the other. For a time this mode of rectification proved entirely effectual, the cilia assuming their normal position. Progressive contraction of the palpebral and the ocular conjunctivæ, however, nullified the advantages gained, but as a supplemental operation I removed small portions of the integument, oval in shape, the long diameter being vertical, and then by a firm suture approximated the opposite extremities. By this device the desired object was attained, which benefit remained only a short time, on account of the progressive contraction of the conjunctivæ alluded to. In the early part of the treatment I removed the cilia by evulsion, but in November I employed electrolysis for the destruction of the bulbs which secreted them.

About this time large blebs for the first time developed simultaneously on the integument of the upper lids. In no other locality on the skin did pemphigus appear. About December 1 a small vesicle invaded the conjunctiva of the right globe on the upper and inner aspect, and near the cornea, which soon assumed the character of an ulcer; this, by the use of the usual agents, healed kindly. Soon after this a large bleb appeared in the lower fornix of the left eye; after a few days this also healed, but left behind its peculiar sequel, cicatricial tissue. Afterwards there occurred a bleb on the conjunctiva of the R. E., which, passing through the usual stages, finally healed. In January a bleb developed on conjunctiva of left globe above the cornea, and simultaneously a small one on the ciliary border of the same lid. A few days before this date, however, she complained of great soreness of the throat and painful deglutition. Upon examination I found an aphthous looking spot, which may have been of the same nature as the general affection under consideration. This, however, quickly healed by the application of a five grain solution of arg. nit. On February 20, 1886, another bleb developed in the left eye, and simultaneously a small one on the margin of the left upper lid. Electrolysis was continued, whenever

the regenerated cilia had matured sufficiently to irritate the globes. This always afforded temporary relief. By means of galvanism I also endeavored to induce a more healthy degree of ennervation and nutrition; one rehophore being placed upon the closed lid, the other being applied to the nucha, or over the site of the sympathetic ganglia in the neck, or held in the hand; and later I applied the one rehophore directly to the conjunctiva, having first rendered the membrane insensible by cocaine, hoping thereby to overcome the persistent tendency to the formation of vesicles. The results were, however, not very encouraging. Eserine was also employed for the diminution of existing congestion, but with no appreciable benefit.

On March 1 a large bleb formed on the upper and temporal aspect of the left globe; this extended to and invaded the edge of the cornea, and simultaneously one appeared in a symmetrical location on the right globe.

At this date the patient ceased attendance for reasons unknown; her present condition therefore can only be conjectured. The cornea not having been directly involved, vision was only indirectly impaired, except from the circumscribed opacity in right lens, as mentioned. The entire lens had become cataractous to some degree as also that of the left, but from senile causes. Strict diet and tonics of quinine and iron were exhibited throughout the period of treatment, and during the last three months arsenic was added. A collyrium also of boracic acid was used; and to the sites of the epithelial abrasions were applied mild solutions of arg. nit. and an ointment of the amorphous oxide of mercury.

"OPIUM ANTIDOTES," AND THEIR VENDORS.

BY J. B. MATTISON, M.D.,

OF BROOKLYN, N. Y.

If aught were asked for as to further proof of the widespread extent of opium addiction in this country, it could easily be given by citing the number of individuals engaged in vending the various nostrums, each of which, it is asserted, has the only true claim to merit as the one genuine, sovereign cure for this phase of human ill.

It is now about seventeen years since an illiterate bricklayer in a Western city—who made some pretensions to the healing art by virtue of a small stock of herbs stored in a little back apartment—was struck with the shrewd idea that in this peculiar field lay a mine which, perchance, might be worked to no little pecuniary profit. Acting on this impulse, the opiate mixture was compounded, advertising circulars vaunting the nostrum made their appearance, the aid of the press was secured, and business began. It grew apace, and the coffers of its enterprising projector expanded as the circle of his deluded victims widened, in their costly but luckless efforts for relief. It was not to be expected that this genius would long be permitted to enjoy a monopoly of such a stroke of fortune, and so, ere many moons had waned, claimants for like honors put in an appearance—the rivalry between them being measured by extent of their pecuniary resources and fertility of advertising device. It proved a fatal attraction to more than one who had begun a legitimate medical career, and had taken obligations, binding as an oath could make them, to do right by their suffering fellows; but who ignored both personal and professional pledges in their greed for gold, and betook themselves to the camp of the common charlatan.

The reason is soon told. In every walk of professional life can be found those who, forgetful of duty, prove faithless to the right. Again, it seems an easy task to secure the aid of some portion of the press, both secular and religious, in furthering schemes of this sort; and, in one case of this kind, several medical journals, misled by the previous good repute of an individual who had allied himself with this disreputable band, placed their pages at command of a small fraternity engaged in furthering his scheme. To their credit be it said, however, that on being made aware of the situation, they promptly refused further publicity and, with two or three exceptions, editorially avowed their unintentional complicity, and thus freed themselves from the stain that threatened to smirch their journalistic apparel.

Another reason—and this, probably, the strongest—is the peculiar nature of this disorder, which impels its subjects to court privacy, and in every way secure themselves from public gaze. This feeling, which is largely the outcome of that mistaken opinion held by the laity—and, strange to say, some in the profession as well—that those who, by force of necessity quite beyond control, have become victims to opium, are simply the slaves of a vicious indulgence, deserving censure rather than charity: this feeling, we say, is the main cause of that desire for secrecy on the part of the patient so essential to the charlatan in this special field, and of which he cunningly takes advantage to his own financial good. In hope of escape, the habitué often spends much of both time and treasure to no purpose; and after months—or years, it may be—realizing it futile, he abandons further effort and berates himself for his folly; yet finds some consolation in the thought that no one else is aware of the course he has been pursuing. Proof of this fact is not needed, yet it may be noted one of these nostrum circulars is before the writer in which, among several asserted claims to special merit, is "absolute secrecy, even from nearest and dearest friends or relatives!"

It really is surprising that men of more than average intelligence, some of our own fraternity—again and again we have known such—will consign themselves to such keeping. Case after case has been under our care in which months and years of time, and hundreds of dollars had been expended on these nostrums without good. In many instances, doubtless, ignorance as to the make-up of these mixtures leads to their purchase, yet it would seem that every well-educated physician should be aware of their nature. Such, however, is not the fact; and so, with the hope that the reports given in this paper may be accorded as wide publicity as their value demands,

let it here suffice to say that, while great advance has been made in the knowledge of drugs and their uses, no agent has yet been discovered that will fully take the place of opium when once the system has become habituated to its use, and any individual making an assertion to the contrary may be safely set down as a knave or a fool.

Some time ago, the writer was requested by the editor of a well-known journal to prepare this exposé, and not long after, a letter was received from the gentleman who has made the main report here given, stating that he had been instructed by his State Board of Health to examine as many specimens of "opium antidotes" as could be secured, and asking my aid in making the list as large as possible. The result is appended, making, it is thought, the most extensive yet presented, and one which should suffice to convince every reader, who may have had any doubt, as to the true nature of these nostrums, and the "ways that are dark" of their vendors.

Before giving details, it may be of interest to note the *modus operandi* of these individuals. In every instance, an accurate statement as to the daily or weekly amount of opium or its equivalent used, is an absolute essential in their so-called treatment. As one says: "Be especially careful to determine accurately *how much* of the drug you use in twenty-four hours, or in every seven days, if preferred." The time of taking, "at what hours," is another point desired, and these being given, it is quite easy to prepare the mixture of such opiate strength as will give a certain amount of the habitual narcotic in each prescribed dose—this amount being exactly that of the previous taking. This done, the habitué is simply continuing his addiction under a new name, and care having been taken that the opiate shall be quite enough for his need, he trudges along, hugging the delusive hope that, in no very long time, he will reach his wished-for goal. The initial amount of the nostrum supplied is intended for one month's using. Then, the patient having become accustomed, it is supposed, to this new order of things, another supply is given for a similar period, differing from the first only in that the amount of opium is lessened with each succeeding month, and so the play goes on, until the patient, failing in his effort, becomes distrustful and betakes himself to some other specimen of the same genus, or else abandons the whole affair. The price per month of the nostrum depends mainly, of course, on the amount of opium it contains. Supposing an habitué to be taking one grain of morphia daily, it ranges from two and one-half to twenty dollars. Patients are urged to procure a "full course," several months' supply, in the outset, the reward for which is a more or less generous (?) reduction in the cost of the nostrum, and—though this is not very explicitly stated—a larger stock of shekels to the credit of the vendor.

The mock honesty of some of these charlatans is amusing. One writes: "I do not advertise or send out circulars, as there are hundreds of quacks who are doing such low and mean work, I have become disgusted!" Another—Stephens—says: "I am aware that there are heartless impostors, destitute alike of position and principle, who are constantly endeavoring to entrap and victimize the anxious, and perhaps too credulous sufferer. The cunningly devised spurious recommendations of these swindlers are well calculated to deceive the unwary. *You will most certainly be swindled by trusting to their representations!*" Still another—Kane—speaking of the so-called "treatment" which he in common with others adopts, says, with an outburst of indignant virtue, it is "practised so shamelessly and heartlessly by charlatans in various Western and Southern States. It is very rarely successful." And again: "Another matter in this connection needs attention, viz.: the lying pretensions of a few charlatans who, by specious advertisements and deceitful lies, induce the victims to these habits to buy their medicines or come under their care for treatment. These sharpers are utterly without conscience, and do not scruple to prey upon and undermine the health of their victims in order to gain a few dollars!" and elsewhere he bewailingly remarks: "As I have before said, I cannot sufficiently deplore the action of those unscrupulous men who prey upon victims of the habit under the guise of physicians. These quacks are utterly without conscience, without a jot or tittle of honesty or honor, and go on bleeding their patients pecuniarily, from day to day, while deluding them with lying assertions and holding out false hopes!"

Some of these nostrums are nothing but disguised solutions of morphia. Several years ago, the writer read a paper on this topic before the Kings County Medical Society, and among the specimens presented one analysis, made by a competent chemist, resulted.

Water	28.66.
Glycerine	66.89.
Morphia	4.45.
	100.00.

The coloring was aniline. Others may contain quinine, strychnine, cannabis, atropia, hyoscyamia or other ingredient; but be the mixture what it may, the prospect of failure is vastly greater than that of success. For obvious reasons, no record of this appears in the array of reputed proof put forth by these pretenders. That is not in keeping with their assertions. The vast volume of failures is a sealed book of blasted hopes and vain endeavor. Through the kindness of Dr. Samuel W. Abbott, Health Officer and Secretary of the Massachusetts State Board of Health, whose courtesy is herewith admitted, the writer quotes from the last —1886—official report of that gentleman as follows: "One of the most evident proofs of an increase in the consumption of opium is the existence and growth of a considerable number of so-called 'cures' or 'antidotes' for the opium habit. These preparations are advertised broadcast in the public prints, and occasionally in professional journals, which should serve a better purpose. If these so-called cures were of a similar composition to the great mass of empirical remedies, but little harm would result from their use. This is not the case, however, with the preparations in question. With but one exception, the active ingredient in the so-called cures examined by the analyst proved to be

opium itself in one or another of its varied forms. The preparations of this character enumerated in the analyst's report were obtained, in all instances, either directly from the proprietors or from their authorized agents, and were accompanied with their published circulars.

"The purchaser of such preparations thus becomes the victim af a cruel fraud, under the supposition that he is obtaining a remedy or antidote, the article which he receives being simply the enemy in disguise against which he is bending his energies to obtain relief. This shameful practice deserves nothing but the severest condemnation. To the credit of Massachusetts, but few, if any, of these preparations are made within its limits.

"There is one notable exception to the above statement as to the presence of opium in these 'cures,' and that is the chloride of gold cure, a preparation sold at an exorbitant price, doubtless in consequence of its alleged precious component. Reference to the analyst's statement, however, shows that this article contains not even a trace of that precious metal. Further comment upon this fraud is needless.

"The circulars referred to as accompanying the 'cures' are omitted from this report. It is sufficient to say that their style is remarkably similar in their methods of securing and fleecing their victims, each one accusing the others of fraud, and publishing as endorsements the names of many prominent persons in various parts of the country. We have sufficient proof that in many instances such names were published without the least shadow of authority."

The nostrum samples we secured were examined by Dr. B. F. Davenport, State Analyst of the Massachusetts Board, and his report is appended:

"S. W. ABBOTT, M.D., HEALTH OFFICER:

"*Dear Sir*:—I have to report upon twenty samples of so-called opium cures which have been obtained from their proprietors. They have all been tested for the presence of morphine, and they have all responded to the usual reaction therefor, except the 'Keeley's Double Chloride of Gold Cure.' This one, however, gave no reaction for the presence of even a trace of gold therein.

"The 'cures' were all uniformly obtained as for one who had acquired the habit of taking the, for an opium-eater, very moderate quantity of only one grain of morphine per day. It was expected, as proved to be the case, that the 'cures' for even such a mild case would contain enough morphine to furnish unmistakable evidence of its presence, if they contained any at all. The twenty varieties of 'cures' were as follows:

"S. B. Collins, La Porte, Ind.; Mrs. J. A. Drollinger, La Porte, Ind.; W. B. Squire, Worthington, Ind.; P. B. Bowser, Logansport, Ind.; J. C. Beck, Cincinnati, Ohio; J. L. Stephens, Lebanon, Ohio; H. L. Baker, Toledo, Ohio; J. S. Carleton, Chicago, Ill.; L. Meeker, Chicago, Ill.; Wm. T. Phelon, Chicago, Ill.; L. E. Keely, Dwight, Ill.; H. H. Kane, New York City; Chas. C. Beers, New York City; Salvo Remedy Co., New York City; F. E. Marsh, Quincy, Mich.; B. S. Dispensary, Berrien Springs, Mich.; B. M. Woolley, Atlanta, Ga.; Geo. A. Bradford, Columbus, Ga.; J. C. Hoffman, Jefferson, Wis.; Jos. A. Dunn, Elizabeth, N. J. Respectfully submitted. B. F. DAVENPORT."

Further comment is uncalled for. He who runs may read.

THE MEDICAL SERVICE OF THE U. S. PENSION BUREAU.[1]

BY P. S. CONNER, A.M., M.D.,

OF CINCINNATI, OHIO.

Professionally we come in official relation with the general Government in the inspection of recruits for the army and navy, the medical care of soldiers, sailors and boatmen, and the examination of applicants for pension, original and increase. The medical corps of the army and that of the navy can be entered only through rigid examination. The merchant sailors and river boatmen are cared for in the Marine Hospital service, by those who have passed an examination yearly becoming more severe. Neither chief nor subordinate in the war, the navy, or the treasury departments has aught to do with the selection of medical officers, and in none of the competitive examinations is regard had to political affiliations or party interests. The result is the existence of bodies of medical men capable, learned, honorable and honored.

The examining surgeons of the Pension Bureau, now numbering twenty three hundred, are the appointees of the Commissioner of Pensions, selected from the local practitioners because of personal friendship, of influential recommendations, or for political reasons; holding office only so long as may be agreeable to the appointing power. A few of the reviewing examiners at Washington owe their positions to having successfully passed competitive examinations; but their tenure of office is an uncertain one, and some of those best qualified have been removed upon the occurrence of a change of administration. The medical positions under the Pension Bureau, therefore, are among the offices which are of the party spoils, belonging to the victors, to be given to those whom it is thought best, for political reasons, to secure and to reward. Good men have often, incompetent men not seldom, been selected. The duties of an examining surgeon are peculiar. Pensions are granted for injuries and diseases received or contracted in the military and naval service, and in the line of duty. The present physical condition is, therefore, first to be determined. Is the applicant sound or unsound? And, if unsound, is the disability that for which pension is claimed? Subjective symptoms are so generally and so largly magnified (especially has this been the case since the passage of the "Arrears of Pension Act"), that little or no regard can ordinarily be had to them. The objective symptoms may be easily recognized, or be so ill defined that their determination is a matter of

[1] Read before the American Academy of Medicine, at its Annual Meeting, at Pittsburg, Pa., October 12, 1886.

great difficulty. If a gunshot wound has been received which has caused manifest disability in loss of limb, in injury of bone or joint, in destruction of tissue, in grave impairment of nutrition, in evident neuralgia, or in marked disfigurement, there is no question but that the applicant is damaged. If there be present positive disease of lung or heart, or liver or kidney, it will be indicated by the ordinary symptoms of such visceral affection, and the subject of it is evidently a diseased man.

But, on the other hand, the alleged complaint may be one the detection of which will require prolonged investigation or special skill, as in the examination of the eye, the ear, the throat, the nervous system, or be, as it not so very rarely is, an affection which can be simulated; and some old soldiers never lose their skill as malingerers. Existence of disease or injury being recognized, the examiner has next to determine whether or not it probably depends upon military service. In many cases such determination can be made only after careful consideration of the applicant's history, and is therefore not so much within the province of the examiner as of that of the authorities at Washington, who are, or are supposed to be, in possession of a full record of the physical condition from the time of enlistment on. But oftentimes the probabilities of a direct dependence, or otherwise, upon causes in action nearly twenty-five years ago can, and therefore must, be established by the examining surgeon. How much likelihood is there, for example, that to-day's advanced tuberculous disease of the lung depends upon the exposures of camp life or the pneumonia of '63? Is the present hepatic or renal disease a legitimate result of army life, especially in view of the fact that the man is evidently a hard drinker? Are the varicose veins of the leg or the scrotum due to hard marching or rough riding, or are they the result of occupation or of developmental changes that took place at and about the period of puberty, before the man went into the army? Again, is not the present disability the result of syphilis or gonorrhœa, and thefore not incurred in the line of duty?

Further, the examiner having recognized the disease or injury, and having satisfied himself that it is the result of legitimate causes entitling to pension, must determine in what degree it unfits for manual labor—in other words, must rate the disability. Here, certainly, is a wide field for the exercise of good judgment based upon knowledge of the ordinary and to be expected effects of an injury or a disease. Even the most hurried glance at what is required of an examining surgeon will suffice to show that he ought to be well educated, experienced in the detection of pathological conditions, of good judgment, honest and independent, having regard solely to what is right and just to the applicant on the one hand and the Government on the other. Besides the 365,783 pensioners now on the roll, there are 168,619 claims pending, and 111,412 rejected claims, many of which may hereafter be reopened. It is probably safe to say that from 150,000 to 200,000 may have to be examined in the near future, at a probable expense, if the present system is continued, of not less than $600,000. Upon the certificates of the medical examiners a first payment of probably not less than $30 000,000 it may be $60,000,000 or more, will be made.

In view of what is required of the examiners, and of the immense expenditures which must be affected by their decisions, is the existing system for the best interests of the individuals or the Government? The method of appointment is not one likely to secure the services of those most competent to investigate complicated and doubtful cases. The large number of appointees necessarily causes great variations in the rating of practically the same disease or injury, with corresponding injustice to those pensioned. Local prejudices for and against the applicants are likely to exist in direct proportion to the number of localities in which the examiners reside. Would it not be better to have a small permanent corps, adequately paid, not engaged in private practice, but occupied solely with the work of examining applicants? The establishment of such a body was a few years since strongly advocated by the authorities of the Pension Bureau. Without hesitation the question may be answered in the affirmative, provided that the *personnel* of the corps be determined by the results of thorough high-grade examinations, in which due regard is had to "aptitude for service." But if its members should be simply selected by the Medical Referee, by the Commissioner, by the Secretary, by any official, high or low, the greatest of the existing evils would be perpetuated.

I have long thought that the best of all plans would be to entrust pension examinations to detailed officers of the Medical Corps of the Army and Navy, familiar as they are with the mental, moral and physical peculiarities of enlisted men, and with the effects of prolonged service. That this might be done both corps would have to be considerably enlarged. There might, for example, be added to the Army medical staff sixty, and to that of the Navy twenty assistant-surgeons. Then, in like number and proportion, eighty experienced medical officers could be assigned to pension work at forty different places in the country; the Government, if necessary, paying the traveling expenses of applicants ordered to report at the central points. Their examinations would be carefully and thoroughly made, without fear, favor or affection. Deserving applicants would get what they deserve, and the ratings would be far more uniform than at present. The cost to the general Government would be materially diminished. There would be no more complaints or charges that pensions were recommended or advised against because of the applicant's connection with this or that political party. That so small a body of examiners might the more readily and certainly do the work at present performed by thirty times their number, they should be relieved of a large part of that clerical labor that now consumes so much of the time devoted to examinations, labor that could as well or better be done by ordinary clerks or stenographers.

Professionally, whether there was a special new corps or enlarged old ones, we might expect benefit in the recorded and reported condition of the soldiers

and sailors of twenty and more years ago. The end results of excisions and amputations, for example, might be determined, as now they cannot be. The slowly developed organic changes arising from, or at least associated with known causes, and not dependent upon time, occupation and habits, could be studied and analyzed. The Government would be benefited, meritorious soldiers and sailors in some degree rewarded for privations, sickness and wounds, scientific medicine advanced, and regard be had to the just demands for an elevation of the plane of medical practice.

A NEW PERIMETER.[1]

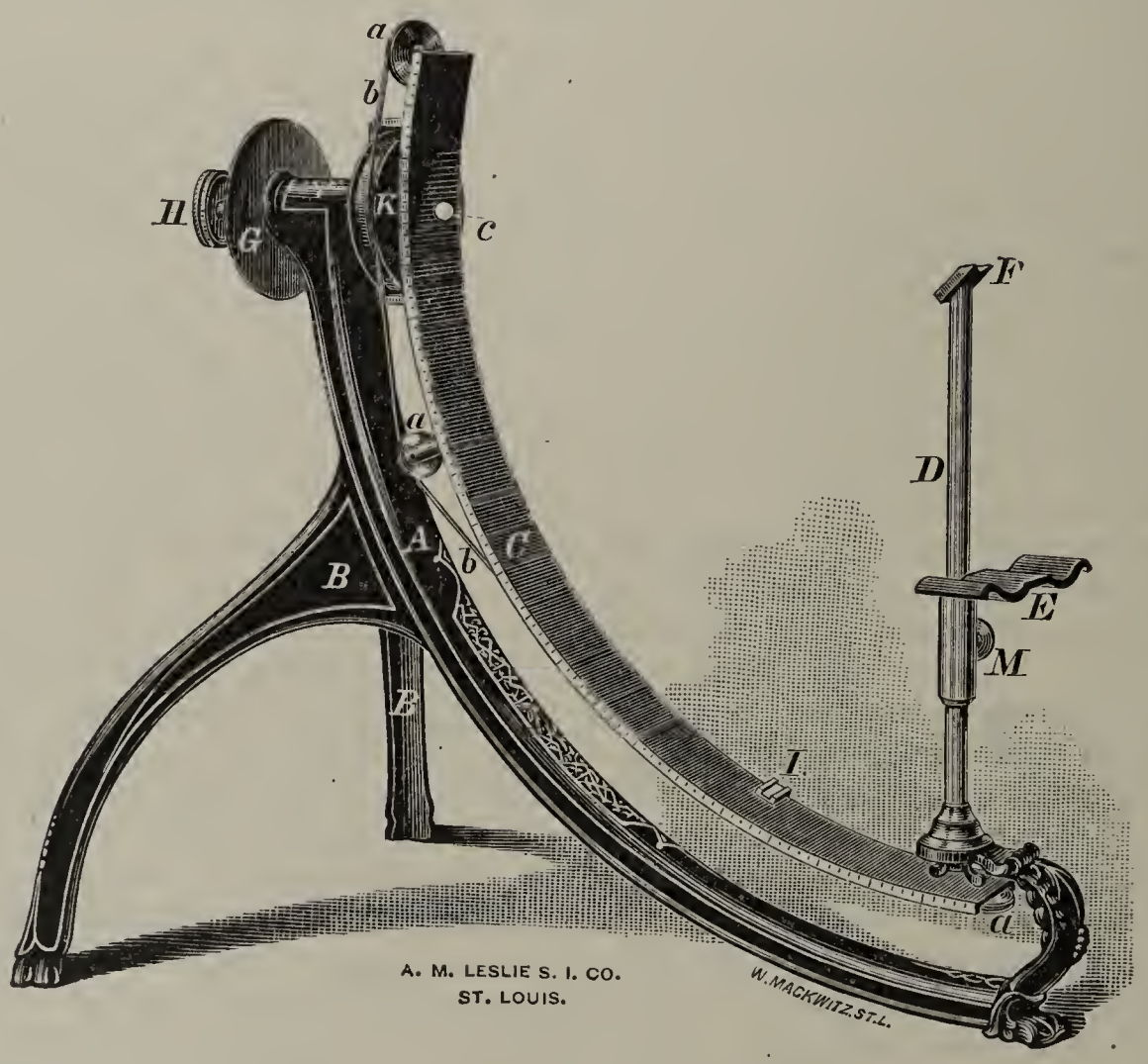
BY LEROY S. DIBBLE, M.D.,
OF ST. LOUIS, MO.

Perimeters are admitted by all practitioners of ophthalmology to be a necessity. But they are so heavy and unwieldy that they have been looked upon as a nuisance in the office, hardly to be tolerated. A perimeter that best meets all the demands for which they are used, is light, neat, and of moderate price, will commend itself to all. These conditions I have tried to meet, with what result I leave my professional brethren to judge. I do not claim great originality; I have simply utilized principles already existing.

The base, A, is of cast iron, japanned, and with the legs, BB, forms a tripod. The quadrant C, of brass, japanned black on the upper side, is cut out by a lathe and is absolutely correct. It has a radius of twelve and one-half inches; a smaller radius I consider useless for testing a presbyopic eye. The chin-rest, E, is of brass lined with black velvet. It slides on the standard, D, and is held at the proper point by the thumb-screw, M.

The eye of the patient is placed just above the eye-piece, F, which prevents the head from moving too far forward while looking at the point of fixation, c.

The movement of the color-carrier, I, is practically the same as in the Förateo instrument, which I consider a great improvement over the usual method of moving the color-carrier by hand, in which case the patient is liable to anticipate the object. I have proven this by actual experiment. The milled head, H, is connected with the pulley K by an iron rod passing through the head of the stand, A. The cord, bb, running over the pulley, K, and the small pulleys, aaa, is attached to the color-carrier, I, which is moved up or down by turning the milled head, H, with the fingers. The dial-plate, G, gives the angle of the quadrant, C. The chin-rest and legs are held in place by the thumb-screws underneath, and can be detached, so that, when not in use, the instrument may be packed away in a neat cherry box provided for it.



This perimeter only weighs 12½ pounds.

3147 Washington Ave., St. Louis, Mo.

[1] Read in the Section of Ophthalmology, Otology and Laryngology, at the Thirty-seventh Annual Meeting of the American Medical Association.

MEDICAL PROGRESS.

ENTEROTOMY FOR ILEUS.—In reviewing the various opinions hitherto expressed of the relative value of enterotomy and laparotomy for the relief of ileus, DR. F. FUHR, of Giessen, and DR. F. WESENER, of Freiburg, compare the two methods together critic-

ally, and decide in favor of enterotomy. One case is given. A widow, æt. 47, had worn a pessary which had pressed the sigmoid flexure of the colon against the sacral bone and here caused local circular inflammation, which subsequently led to a stricture of the gut. Ileus set in, and the patient's life was saved by enterotomy performed in the left inguinal region, the transverse colon being stitched to the wound. The fæces, however, could pass the artificial anus in part; and as they could not pass the strictured gut, in the course of time the intestine between the artificial anus (in the transverse colon) and the stricture in the sigmoid flexure became enormously distended and pressed upon the abdominal organs to such an extent that death ensued, under the symptoms of constipation, ascites, icterus, vomiting, singultus, dyspnœa and œdema of the lungs—about two years after the operation. An ovarian tumor (cysto-adenoma) was also found at the post-mortem, which had not materially influenced the case.

In speaking of the merits of enterotomy as compared to abdominal section, the authors point out how the protrusion of the greatly extended intestines through a laparotomy wound prevent their replacement. Puncturing the gut with a fine needle they consider too dangerous, for the reason that the internal existing pressure cannot be sufficiently accurately estimated, which might be considerable enough to force out the contents of the intestine into the abdominal cavity after reposition. They concede, however, that the antiseptic method renders laparotomy a less dangerous proceeding than it formerly was. The personal inconvenience attending artificial anus is not at all great, and its existence is not even suspected by those ignorant of it. The fact that statistics show an equal amount of mortality after both operations is accounted for on the ground that the laparotomies attended by fatal results are rarely published.

As to the objection sometimes urged against enterotomy, that a portion of the stenosed gut itself might be opened, and thus no relief be obtained, the authors believe that the abnormal gut may be recognized by the fact that it contains transudated blood. Nor is there much danger of opening a loop of intestine too near the duodenum, if the operation of enterotomy be done in the inguinal region.

The authors explain the fact that enterotomy frequently leads to radical cure of ileus, by pointing out how the operation affords more space in the abdominal cavity, so that the invagination and axial torsion of the gut may be redressed. The danger exemplified by the case given, however, still remains an objection to enterotomy. Accumulation of fæces between the opening and the occluded portion of the gut may cause a fatal issue.—*Deutsch. Zeitzch f. Chir.* Bd. 23. Hft. 3, 4. March, 1886.—*Annals of Surgery*, September, 1886.

THE DIETARY IN CATARRH OF THE STOMACH.—The late DR. T. A. MCBRIDE gave the following diet list:

Milk cold or warm.
Bouillon.
Beef tea prepared cold.
To one pound of beef cut up in pieces the size of dice, add one pint of distilled water and 10 drops of dilute numatic acid. Let stand in refrigerator 24 hours; strain and season to taste, and if desired, warm, but not enough to make cloudy.
Peptonised milk.
Zwiebach not sweetened, crackers, rusk, toast.
Natural Seltzer and Vichy waters, carbonated distilled water.

II.

Soft boiled or raw eggs.
Rice or sago boiled soft in milk.
Clear soups.
Pureé of potato.
Vermicelli or "noodle" soups.
Raw oysters.
Calves brains, Sweet breads, Pigeons, Chicken, Calves feet (?) } boiled, roast, stewed or broiled.
No vegetables, except those mentioned to be allowed with soups.
No "wheaten grits," hominy, barley, oatmeal.

III.

"Minced" or finely cut boiled ham.
" " " rare beefsteak.
Coffee and tea.
Articles under I and II as advised.

IV.

Rare roasted beef and veal, especially cold.
Roasted chicken, and pigeons without sauces, especially cold.
Venison.
Partridges, woodcock and snipe, not too fresh.
Boiled fish.
White bread (stale).
Macaroni.
Baked apples.
Fruit jellies.
A very small amount of butter, otherwise no fats at any time.
Only dry wine; no beer; no ale or porter. Rye whiskey or brandy diluted with the waters mentioned may be used with lunch and dinner when pronounced necessary.—*Jour. of Reconstructives*, October, 1886.

ASSAFŒTIDA IN HABITUAL ABORTION.—PROF. PAOLO NEGRI reports two cases of habitual abortion treated by assafœtida. The first case, was that of a lady, young and in apparent health, who had been married seven years. The first pregnancy was arrested at the third month, the second went to term, and then followed five more which were interrupted at periods ranging from the second to the seventh month. Both the lady and her husband were free from disease of any kind, and nothing abnormal could be detected on examination of the genital organs to account for the repeated miscarriages. Various measures had been tried in previous pregnancies, but without relief. Upon the appearance of symptoms indicating the beginning of another

pregnancy assafœtida was ordered, the patient took the remedy regularly, and though there were occasional slight hæmorrhages, the pregnancy went on to term and the woman was delivered of a living child. The second case was that of a lady who had had four miscarriages in succession, none of her pregnancies ever having gone on to term. When in the third month of her fifth pregnancy she was seen by Dr. Negri. No signs of syphilitic disease could be discovered in herself or her husband, nor was there any other apparent cause for the repeated abortions. Assafœtida was at once ordered, and the patient persevered in the treatment, taking toward the end of her term as much as 18 grains of the gum resin per diem. The pregnancy was uninterrupted by any accident, and went on to full term. Although the number of cases was so small, the results were nevertheless so good as to warrant the author in advising a trial of assafœtida in all cases of habitual abortion for which no cause can be assigned.—*Lo Sperimentale*, August, 1886.

ACORN COCOA IN THE TREATMENT OF DIARRHŒA AND VOMITING IN CHILDREN.—Acorn cocoa is a preparation of ordinary cocoa powdered and freed from fat, to which are added the soluble parts of roasted acorns without cellulose, and a little sugar and roasted flour. Liebreich suggested this combination, and that it should be tried in the treatment of diarrhœa and vomiting of children, and it was found that of one hundred and two cases of diarrhœa with vomiting only six died, and the remainder recovered in from one to eight days. This combination is now manufactured as a substitute for tea, coffee, or cocoa, and is refreshing, tasty, and nutritive even for adults. DR. F. W. ELSNER (*Australasian Med. Gazette*, June, 1886), has also had a considerable experience with this remedy in this class of cases, and has obtained marked success by its use. His mode of administration was to mix a teaspoonful of it with cold water in a small cup, and then to boil it, constantly stirring, and this quantity is administered thrice daily by means of a spoon or feeding-cup. All other food and medicine is prohibited, and the quantity may be gradually reduced. Dr. Elsner has notes of twenty cases of continuous and exhausting diarrhœa with persistent vomiting, which had continued for three weeks in two cases, and for shorter periods in the others. In half the cases various remedies had been employed before the acorn cocoa was administered; in the others, however, it was the first drug given, and its effect was rapid and complete in each instance, and it never took more than two days to bring about improvement, while twelve days was the outside limit of time in which a complete cure was effected.—*Medical News*, October 30, 1886.

TOTAL EXTIRPATION OF SCAPULA WITH EXCISION OF THE HEAD OF THE HUMERUS AND THE ACROMIAL PORTION OF THE CLAVICLE FOR CARIES.—DR. SCHULZ, of Sonnenburg, in Neumark, reports the following case: A farm-hand, æt. 16, was admitted to the Johanniter Hospital in Sonnenburg, August, 11, 1884, for pain, redness and swelling of the shoulder-joint. He had gone to sleep July 1884, and, and on awakening, could not move his arm. Treatment with tr. iodine. After one week incision liberating pus. Fistulæ remained below the spine of scapula and in the internal aspect of the upper third of arm. Movement was greatly impaired. Pressure caused pain; temperature 40° C.; pulse feeble; occasional fainting spells. Treatment—tonic, eggs, wine, quinine, phosphates; repeated incision and drainage; arm maintained in fixed position.

Subsequently improvement set in. But incision of an abscess above the spine of the scapula became necessary; the focus was scraped out with the sharp spoon. Roughened bone could be felt over the whole of the scapula with probes, and joint-affection was established.

September 1. Arsenic given, with general improvement; subsidence of suppuration; increase of appetite. Soon, however, another abscess appeared near the acromion demanding incision.

December 12. Extirpation of scapula; incision from spine to angle; subscapular, artery tied; head of humerus exsected, as well as acromial end of clavicle, both being carious. Sublimate dressings; reactionary temperature 38.0°; subsequent reconvalescence.

February 10. Patient up and about; can move fingers and forearm, and rotate and swing upper arm, but cannot abduct it.

May 6. Dismissed with a support; can write; was seen after five months again, still improving.

Some remarks are added and brief mention of twelve other cases is made.—*Deutsch. Zeitschr. f. Chir.* Vol. 23. Hft. 3 and 4. March, 1886.—*Annals of Surgery*, September, 1886.

LANTANINE.—Lantanine is an alkaloid discovered by M. NEGRETE, and extracted from Yerba sagrata of the family of verbenas. M. Buiza has observed that, like quinine, this alkaloid had some action on the circulation. It slows the nutrition, and at the same time lowers the temperature. The most delicate stomachs tolerate lantanine. Intermittent fevers that prove refractory to quinine have yielded to the influence of 2 grammes of lantanine. In order to produce antipyretic effects in febrile conditions the dose employed is from 1 to 2 grammes in twenty-four hours, given in pills of 10 centigrammes. In intermittent fevers the drug is administered immediately after the paroxysm. Ninety-five times out of a hundred a further paroxysm will not appear. The tincture of latana cannot be employed owing to its intense bitterness, which cannot be masked by syrup or wine.—*Lancet*, Oct. 16, 1886.

IODOL IN EAR DISEASES.—DR. STRETTER, who has used iodol, the new inodorous substitute for iodoform, in a large number of cases of ear disease, finds that in acute purulent inflammatory affections iodol applications rapidly produce marked benefit, but that in chronic inflammations of the middle ear it is generally quite useless, or at best no better than other more common methods of treatment.—*Lancet*, October 16, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, NOVEMBER 20, 1886.

SOME POINTS IN THE TREATMENT OF COMPOUND FRACTURES.

At the first autumn meeting of the New York County Medical Association, DR. FREDERIC S. DENNIS read a paper on "Some Points of Special Interest in the Treatment of Compound Fractures; including a Report of over Five Hundred Consecutive Cases." A remarkable point about it is the vast contrast which his statistics present to those of the ablest surgeons both in Europe and America before the days of antiseptic surgery. An analysis of his cases, 516 in number, shows 107 fractures of the skull, 47 fatal (39 dying within the first forty-eight hours); 15 of the arm with 1 death (a severe case of railway injury, fatal within forty-eight hours); 23 of the fore-arm, with 1 death (within twenty-four hours); 53 of the thigh, 5 fatal (all within forty-eight hours); 150 of the leg, of which 15 required amputation, and of the remaining 135, 125 recovered. Out of the remaining ten, 2 were removed from the hospital, at their request, immediately after reception, and 8 died (all within forty-eight hours). There were 37 fractures of the hands and feet, all accompanied by much damage to the soft parts; one died from other injuries, the others recovered; of 23 of the shoulder, elbow and wrist, all recovered; 40 of the hip, knee and ankle, 4 requiring amputation, 3 proving fatal (in none of the latter was septicæmia the cause of death); 24 fractures of the carpal, metacarpal, tarsal and metatarsal bones, all recovered; 28 of the jaw, all recovered; 13 of the ribs and nasal bones, 1 died within thirty-six hours; 1 fracture of the ilium, and 2 of the malar bones; all recovered. In the 516 cases there were thus 59 deaths, 19 cases requiring amputation, and 2 cases in which, owing to early removal from the hospital, the result was unknown. Of the 59 fatal cases, 49 died within the first forty-eight hours. Of the remaining 10, 1 died of tubercular meningitis (there was no septic trouble); 1 of uræmia; and of the others, only 2 could be attributed to septic infection of the wound. One, with a fractured skull, died fifty-three hours after trephining; the other was a man over 60 years of age, whose foot was very badly crushed.

According to the most reliable statistical tables, the mortality of compound fractures in hospitals before antisepsis was from 26 to 68 per cent. Since the introduction of antiseptics the death-rate has fallen to 4 per cent. In Dr. Dennis's cases, there was not a single case among the fractures of the extremities of death from septo-pyæmia. This magnificent result, as we all know, is due to the science of bacteriology, and for such a triumph the profession is indebted to Sir Joseph Lister, whose name can never be disassociated from the march and progress of surgery.

In regard to the treatment of compound fractures Dr. Dennis holds that, while absolute cleanliness is essential, and extension necessary, no fixation apparatus should be allowed to remain in position longer than eight days without an inspection of the parts; as otherwise, the result may be unsatisfactory. The seat of fracture should be inspected at the end of eight days, and again at ten days; after which the dressing may remain untouched as long as required. He is more and more impressed with the very great importance of the first dressing; and he thinks this should be made with the same care and attention to detail as in cases of resection of bones or laparotomy. The treatment consists, first, in securing perfect asepticism; and, second, in the application of an efficient plaster of Paris support. For some time past Dr. Dennis has instructed the ambulance surgeons in the 99th Street Hospital to make antiseptic irrigations and apply antiseptic dressings in all cases of compound fractures before lifting the patient into the ambulance; and the results thus secured have been extremely satisfactory.

The first of the special points to which Dr. Dennis calls attention is *meningeal hæmorrhage*. In cases in which this occurs it has hitherto been the common practice to tie either the common, or the external, carotid. In a number of cases, however, he has controlled the hæmorrhage without doing this. In the first of these cases he removed the bone to the extent of about six inches, and endeavored to grasp the middle meningeal artery with the forceps, but on

account of the receding of the dura mater he could not do this until he ran a tenaculum through the dura, and then brought it out in such a way as to include and raise the lacerated and bleeding vessel. In this way he was able to catch the artery and tie it easily. This method may perhaps be regarded as bold, but the results show that it is justifiable when compared with former statistics. In connection with this point he presented specimens showing that meningeal hæmorrhage may be produced by *contre-coup*.

The second point of special interest is *fat embolism*, to which the attention of the profession was first directed by Wagner and Zenker. While this condition is usually fatal, in connection with fatty liver or tuberculosis, it is usually by no means so serious a complication of compound fractures. The symptoms, in general, resemble those of secondary shock, and the occurrence of Cheyne-Stokes respiration is not infrequent. In several cases Dr. Dennis has found an abundance of fat globules in the urine. Fat embolism is more frequent in the aged than in younger subjects. He points out the differential diagnosis between this condition, secondary shock, and pulmonary embolism, and says that one of the principal points in this is the matter of time (fat embolism always occurring within three days). Treatment consists in the administration of ether, on theoretical grounds for the purpose of dissolving the fat, and of appropriate stimulants. He mentioned a case of fat embolism now under treatment in Bellevue Hospital, which occurred in connection with a simple fracture of the fibula. Two days after the accident the patient was suddenly seized with great dyspnœa and depression, and the temperature ran up to 104°, while the urine was found loaded with fat globules. Under the administration of Hoffman's anodyne and carbonate of ammonia the patient was relieved.

The third point is *insanity following fracture*. While insanity is sometimes undoubtedly due to traumatism, it is usually difficult to trace it to a fracture of the skull. Dr. Dennis has seen some such cases. In one of these the patient is now insane. In another, idiocy and imbecility resulted. In one in which constant severe headache, accompanied by more or less mental aberration, followed a fracture, Dr. Dennis trephined, and the patient was cured. In three cases of traumatic epilepsy, in which there was more or less disturbance of the mind, he also effected a cure by trephining. He is convinced, however, that in epilepsy there is little to be expected from trephining except in cases in which there is well-marked depression. He rightly speaks of the importance of always raising a depression of the skull as soon as possible after the injury, whether there be any symptom due to the depression present or not. By such a procedure the patient may be saved much trouble, and possible insanity in the future.

The fourth special point is *malignant disease*. Dr. Gross pointed out the fact that about one-half of all the cases of malignant disease may be traced to traumatism, and Dr. Dennis has been able, in quite an extended experience, to confirm Dr. Gross's researches; although it is not often easy to trace such disease to fractures. Sarcoma is usually the variety of malignant disease that results from traumatism. Epithelioma may also develop indirectly; but this almost always originates in the soft tissues, in connection with a sinus leading down to the bone. When malignant disease occurs, early amputation is indicated.

The fifth point is *tenotomy*. Two years ago, Dr. Dennis called attention to the value of tenotomy in many cases of compound fracture; and since then he has met with a considerable number of cases which have further confirmed him in this opinion. While it is of great utility in all oblique cases, in which there is difficulty of reduction, it is useless in vertical fractures. He has practised it not only on the tendo Achillis, but also on the hamstrings, and the tendons of the arm and fore-arm.

The sixth point was *healing by Schede's method*. Fluid blood and blood-clots, if perfectly aseptic, are undoubtedly valuable aids in hastening and perfecting repair by primary union; but if rigid antisepsis be not carried out, they may be a source of great danger. This is doubtless the reason why this method was not adopted earlier, as it is only since the days of antiseptics that it has become practicable.

The last point is *amputation*. Formerly, this was resorted to in a great majority of all compound fractures admitted to large hospitals, as the procedure was necessary in order to prevent blood-poisoning. In Bellevue it was practised in every serious case; and a fracture into the knee or ankle joint was regarded as affording a positive indication for amputation. But now the case is entirely different, and the loss of a few inches of the shaft of a bone (although some permanent shortening may result), does not justify amputation. The limits for this operation are now extremely narrow and contracted; and this may be considered one of the greatest advances in modern surgery. When amputation is found to be necessary, it is proper to defer the operation for several days in cases in which great shock is present; while formerly this was not possible without subjecting the patient to the greatest possible shock.

MR. TAIT ON PELVIC HÆMATOCELE.

As our readers have been already informed, the Ingleby Lecture for this year was delivered by Mr. Lawson Tait, on September 3, his subject being "Pelvic Hæmatocele." Those who are familiar with the writings of Mr. Tait would naturally suppose that he could not deliver a lecture on a surgical subject without severely criticizing some one, and the lecture under consideration is no exception to his general rule. And by this very fact Mr. Tait not infrequently lays himself open to just criticism. In this lecture, for example, he gives to Bernutz and Goupil the credit of having brought hæmatoceles into professional notice, in 1866, apparently forgetting, what he almost immediately mentions, that Nélaton wrote on the subject in 1850, and that Récamier described a case in the *Lancette Française*, in 1831. We must suppose, however, that Mr. Tait is so occupied with his surgical work, certainly the most marvelous that the world has ever seen, that he has little or no time to plod through ill-arranged literature. And however severe his criticism may be his experience is so great, and his results so good, that the surgical and gynæcological worlds give attentive ear to all that falls from his lips.

Mr. Tait thinks that the term "pelvic hæmatocele" ought to be retained to cover all effusions of blood which have their origin in the pelvis; and he advises this because it would then cover the vast majority of cases of effusion of blood into the peritoneal cavity—"for if we exclude the results of traumatic lesion there are very few effusions of blood into the peritoneal cavity which have not a pelvic origin—a fact which is at once indicated by the extreme rarity of the occurrence in men." In the pelvis or abdomen an effusion of blood must be either within the peritoneum or outside of it; though it will be remembered that Bernutz held that true hæmatocele consisted of an effusion of blood within the peritoneum, while Simpson held that there could not be such a thing as an intra-peritoneal hæmatocele or effusion. One has only to remember his anatomy to see the differences as to lesion and results between an effusion of blood into extra-peritoneal tissues and an intra-peritoneal effusion. A peri-nephric effusion would be extra-peritoneal, and could scarcely be so extensive as to be fatal unless a large trunk were ruptured. But when a vessel ruptures into the peritoneal cavity there is no cellular tissue to confine it, and act somewhat as a compressive hæmostatic, and the bleeding would be likely to continue until death or very serious collapse ensued. "All of us who have experience in abdominal surgery know that when blood flows in quantity into the peritoneal cavity, probably by reason of its dilution by the lymph always present there and easily excited into excessive flow by any abnormal condition, it does not show much tendency to coagulate, save in a very fitful and fragmentary way. One of the most remarkable proofs of this is the influence of the drainage-tube in arresting hæmorrhage. If the cavity is kept dry by frequent withdrawal of the blood oozing from torn pelvic adhesions, the bleeding will soon stop; but if drainage is not kept up the bleeding will probably prove fatal." Now what will happen when a small vein ruptures in the tissue and between the folds of the broad ligament? Very much the same thing as in the case of a peri-nephric effusion, except that the cellular tissue here is more limited in quantity than in the region of the kidney. There is a space between the folds of the broad ligament which is incapable of rapid and indefinite extension, and there are two processes by which the tendency to excessive hæmorrhage is arrested: "the first is the natural tendency on the part of the interstices of the broad ligament to limit the bleeding; and, again, the pressure of the broad ligament itself, as a membrane distended and resisting further distension, exercises pressure upon the bleeding point, and becomes a powerful natural hæmostatic."

These anatomical considerations, combined with what is known pathologically of hæmatocele, justify the division of these effusions into extra- and intra-peritoneal hæmatocele. It must be admitted, with Mr. Tait, that there is much confusion on this subject in the works of English writers. Mr. Tait gives two causes for extra-peritoneal hæmatocele; one very common, the other very rare: "The first is a sudden arrest of a metrostaxis, which may either be normal menstruation or the pseudo-menstruation which occurs so constantly after abdominal operations. On examination the uterus will be found to be fixed on one side, sometimes on both, and this occurs with a suddenness that puts inflammatory effusion out of the question. In the majority of cases the effusion is not extensive enough to be felt above the brim of the pelvis, but in severe cases it is, and then it forms a rounded and distinctly limited tumor, with a feeling of distinct fluctuation." He concludes that this accident is almost, if not entirely, devoid of mortality. He gives one important diagnostic sign of extra-peritoneal hæmatocele which cannot occur in the intra-peritoneal variety: the blocking up of the rectum by effused blood dissecting around the rectum outside the peritoneum and causing a stricture. In

cases of extra-peritoneal effusion by sudden arrest of metrostaxis, apart from operation, the uterus will be felt fixed and generally pushed forwards, with a boggy swelling behind or one side of the uterus, and, if the effusion be large, the mass is felt distinctly limited by the distended broad ligament above the pelvis, this latter condition being the essential diagnostic difference between the two varieties of hæmatocele. Another cause of effusion of blood into the broad ligament, much more rare and probably much more fatal, says Mr. Tait, is the rupture of a tubal pregnancy about the twelfth week. This rupture may be into the cavity of the broad ligament, causing an extra-peritoneal hæmatocele, and may become fatal by a further rupture of the broad ligament cysts and hæmorrhage into the peritoneal cavity. But when the second rupture does not occur, Mr. Tait is sure that the ovum dies and everything is absorbed, in the majority of cases; but that in rare cases the ovum does not die, but develops into a broad-ligament pregnancy. Certainly this seems the best explanation of what seems otherwise inexplicable. Mr. Tait's conclusions concerning extra-peritoneal hæmatocele are that, save under three sets of circumstances, this is an accident free from danger; these are: when a secondary rupture of the cyst occurs with continued bleeding into the peritoneum; when it is merely a stage in the growth of an extra-uterine pregnancy; when it goes on to suppuration.

The most common cause of intra-peritoneal hæmatocele is rupture of a tubal pregnancy, according to Mr. Tait, and there is no reason to doubt that this assertion is correct. But whatever be the cause the indication is clear: the abdomen must be opened and the hæmorrhage stopped. Mr. Tait, in three years and a half, has operated upon twenty-five cases of ruptured tubal pregnancy, and saved twenty-four patients, who would have died but for the operative interference. "Intra-peritoneal hæmatocele is fatal with such almost uniform certainty that so soon as it is suspected the abdomen must be opened and the hæmorrhage arrested."

LOCAL ANÆSTHESIA.—Many devices have been resorted to for inducing local anæsthesia sufficient to relieve neuralgic pains, and to enable the surgeon to perform many operations without causing pain, and without the dangers of general anæsthesia. In a short, but interesting article on this subject, in the *New York Medical Journal* for November 6, DR. J. LEONARD CORNING, of New York, claims that very efficient local anæsthesia can be produced without pain by first rendering the skin over the part to be anæsthetized more porous by perforating it with needles in the manner practised with the instrument of Baunscheidt, and then apply over the surface a sponge electrode saturated with a 2½ per cent. cocaine solution, and keeping it connected with the battery from three to four minutes, of sufficient intensity to cause a slight sensation of heat. He suggests that the method can be made more efficient if the surface to be rendered anæsthetic or insensible is rendered bloodless by the pressure of Esmarch's bandage immediately before the needle punctures are made. The whole method as proposed and practised by Dr. Corning, is worthy of attention and fair trial.

COLUMBUS MEDICAL COLLEGE, OHIO.—Three or four years since the diplomas of this College were refused recognition by the West Virginia State Board of Health, much to the detriment of the reputation of the College. We are informed that the same Board of Health has recently reversed its former action, and placed the Columbus Medical College on the list of colleges *in good standing*, its diplomas to be recognized for registration on the same basis as those of all other reputable medical colleges.

ARCHIVES OF GYNECOLOGY, OBSTETRICS AND PÆDIATRICS.—The publishers, Leonard & Co., 141 Broadway, New York, give notice that these publications will be issued *monthly* instead of *bi-monthly* as heretofore.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF VIRGINIA.

Seventeenth Annual Session, held at Fredericksburg, Va., October 26, 27, and 28, 1886.

(*Concluded from page 557.*)

WEDNESDAY, OCTOBER 27.—SECOND DAY.

EVENING SESSION.

The following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. Bedford Brown, of Alexandria, Va.

Vice-Presidents—in the order named: Drs. Alex. Harris, of Jeffersonton, Culpeper Co.; Herbert M. Nash, of Norfolk; and L. Ashton, of Falmouth.

Recording Secretary—Dr. Landon B. Edwards, of Richmond.

Corresponding Secretary—Dr. John F. Winn, of Richmond.

Treasurer—Dr. Richard F. Styll, of Richmond.

Chairman of Executive Committee—Dr. Wm. W. Parker, of Richmond.

Chairman of Committee to Nominate Applicants for Fellowship—Dr. Wm. D. Turner, of Fergusson's Wharf, Isle of Wight Co., Va.

Chairman of Committee on Publications—Dr. C. W. P. Brock, of Richmond.

Chairman of Necrological Committee—Honorary Fellow Dr. Samuel C. Gleaves, of Wytheville.

To deliver the Annual Address to the Public and Profession, Session of 1887—Dr. Wm. S. Christian, of Urbanna, Middlesex Co.

Subject for General Discussion, Session of 1887—School Hygiene.

Leader in Discussion—Dr. Hunter McGuire, of Richmond.

Delegates to American Medical Association and State and other Societies—To be appointed by the President.

Place of meeting of Session (about November, 1887)—Richmond, Va.

Examiner on the Virginia State Board of Medical Examiners from the State at Large (to fill unexpired term of two years of Dr. Dabney, who has just resigned because of being elected a Professor in the University of Virginia)—Dr. I. S. Stone, of Lincoln, Va.

Dr. Rawley W. Martin, of Chatham, Va., the retiring President, was elected an Honorary Fellow of the Society.

Dr. C. W. P. Brock, of Richmond, introduced resolutions looking to the establishment of a Virginia State General Hospital, which were favorably considered, and referred to a committee of five for perfection of plans, etc. This subject will, no doubt, be brought up for further consideration at the next annual session of the Society, in advance of the assembling of the next Legislature of Virginia.

The Treasurer, Dr. R. T. Styll, of Richmond, presented his annual report, showing a balance of $213.11 on hand after the payment of all outstanding obligations of the Society.

Dr. John S. Apperson, of Town House, reported on

ADVANCES IN PRACTICE OF MEDICINE.

He began by taking up the *reflex neuroses*, instancing the late views regarding the pathology and treatment of hay fever as a decided advance. Ord's theory as to the cause of *pyrexia*—that it is chiefly due to the fact that new tissues are not built up to replace disintegrated tissues, and that the heat which should have been used up accumulates in the body and raises its temperature—was dwelt upon. The necessity for the exercise of caution in the use of antipyrin was pointed out. The subject of *bacteriology* engaged much space, and the record of Pasteur with regard to hydrophobia is believed to be an advance.

Thursday, October 28.—Third Day.

Morning Session.

Dr. R. M. Slaughter, of Theological Seminary, Fairfax Co., presented the report on

ADVANCES IN CHEMISTRY, PHARMACY, MATERIA MEDICA, AND THERAPEUTICS.

He gave the recent literature on the newly discovered physiological alkaloids—*leucomaines*—and spoke of their relation to autogenesis of certain diseases. Under the division of chemistry, he shows that *lanolin* was spoken of in 1590 in the "Pharmacopœia of Florence." This report is full of details; such as how to mask oils, to deodorize iodoform, to preserve chloroform, etc. Under the heads of Materia Medica and Therapeutics, the many uses of cocaine, the value of nitro-glycerin in angina pectoris, and of a five per cent. solution of antipyrin as a hæmostatic, etc., are detailed. Hypnone and urethran are spoken of favorably as hypnotics. Sparteine sulphate as a cardiac tonic is mentioned. The experiments being made with salol or salicylate of phenol as an antiseptic, antirheumatic and antipyretic, and with kola as a stimulant and prophylactic against dysentery, are recorded.

Dr. Jacob Michaux, of Richmond, read his report on

ADVANCES IN OBSTETRICS.

He first noted the rhythmical contractions of the gravid uterus, a sign first pointed out by Mr. J. Braxton Hicks, of London. Mr. Lawson Tait declares it to be a more certain one than any other, and can be appreciated by laying the extended palm gently upon the abdomen of the woman, when there will be observed perfectly apparent alternate, rhythmical contractions and relaxations of the organ, by which at one time it will be "hard as a cricket-ball, and at another soft as a cushion." He next described Hegar's sign of pregnancy, and quotes Dr. E. H. Grandin as saying that this condition is the most reliable of the earlier signs, and consists of the increased transverse diameter of the uterus as revealed by bimanual examination and rectal touch. *Electricity* as an oxytocic, was next noticed and fully described. The treatment of puerperal fever is claimed to have been improved by the use of antipyrin to reduce temperature. Prof. Mundé believes that the drug owes its value to its action as a sudorific. He also advises the use of the ice-water coil over the abdomen to reduce local inflammatory action. The use of the curette to remove decomposing secundines from the cavity of the womb to be followed by antiseptic douches, carefully administered, and discontinued as soon as the cavity is found to be clean, is believed to be proper and safe.

Dr. Bedford Brown, of Alexandria, presented "*A History of My Personal Experience in the Observations and Treatment of Puerperal Eclampsia during a Practice of Thirty-Five Years.*" (See The Journal of October 13, p. 533.)

Dr. Otis F. Manson, of Richmond, Va., read a paper on

MALARIAL HÆMORRHAGE.

He gave a résumé of the history of hæmorrhage occurring as a phenomenon in connection with malarial fever, from the time of Hippocrates, to the present day. He gave, *in extenso*, the facts in rela-

tion to its seat, frequency, mortality, type, diagnosis, prognosis, anatomy and treatment.

The symptoms varying according to the organ from which the hæmorrhage proceeds—from the simple benign epistaxis down to the gravest forms occurring in paludal fever, in which the flow of blood proceeds from the lungs, stomach, intestines, uterus and kidneys—are minutely detailed, to which are added illustrative cases terminating in health and death. From this collection of facts, he endeavors to prove that hæmorroage has never, until recently, been regarded as a prominent or diagnostic symptom in malarial disease; that with the single exception of epistaxis, (a common result of arterial tension in many diseases and even in conditions such as plethora, scarcely worthy the name of disease) that hæmorrhage from vital organs in malarial disease has been a rare occurrence; and that although a certain number of cases of its various forms may be gleaned from the vast field of medical literature, still it has been considered by all rather as an anomolous and unexpected event; in short, that malarial intoxication has never been classed among hæmorrhagic diseases until within the latter half of the present century. During this period, however, the scene has altogether changed. Organs which previously had been those most rarely represented as the sources of hæmorrhage—the kidneys—now play the most important rôle in malarial fever, and the so-called *malarial* hæmaturia has assumed a fearful interest from its frequency and fatality. The writer confidently asserts that before the year 1850, the cases of hæmaturia, having the remotest connection with malarial disease, may be counted upon one's fingers; whereas, since that date, it has appeared almost simultaneously, from the Western boundaries of our country to the distant islands of Eastern Africa, as a sporadic, endemic and epidemic disease. The writer's view of the comparative infrequency of this disease from the time of Hippocrates down to the present century is based upon the fact, that, although he has perused the works of nearly every distinguished authority on malarial diseases to be procured in America or in Europe, embracing the contributions of twenty-three centuries, not more than six writers make the slightest allusion to it, whilst since that period he has collected contributions of more than seventy writers who have devoted very many pages to the subject, and which united would form several large volumes.

From this array of facts, the natural and inevitable inquiry arises as to the causes of the recent frequency and fatality of this last form of malarial hæmorrhage, which the writer discusses at length. Finally, the various methods of treatment which have been found to be most successful by those possessing the greatest experience in this and other forms of malarial hæmorrhage, are related.

In closing Dr. Manson expressed the hope that his contribution may stimulate others possessing greater opportunities of observing malarial hæmorrhage to investigate the subject more fully in order, that its pathology may be perfected, and its therapeutics improved.

DR. M. A. RUST, of Richmond, presented a paper on

THE ETIOLOGY OF ZYMOTIC DISEASES,

which forms a continuation of his remarks last year on the same subject.

He dwelt on the importance of a study of bacterial life in general, in order to arrive at a better comprehension of the causal relations of pathogenic microbes to disease. He gave illustrations of the ubiquity, prolificacy and tenacity of life in the common or putrefactive bacteria; enlarged on their physiological and noxious actions upon the human organism; their power to manufacture poisons (ptomaines). He directed attention to the important question of the *constancy* and *inconstancy* of bacterial forms. He finds the theory that the pathogenic microbes originate by transmutations from the common bacteria, not sufficiently sustained by facts, nor in harmony with clinical phenomena. He considers it a reasonable and warrantable assumption, that the microbes of human diseases have been evolved from the putrefactive or common bacteria at that remote time when civilization and its concomitant accumulation of filth began to prepare for them the fit medium. This medium still continues to constitute the fostering ground for their development. Like every other organism, man and human mind included, bacteria are acted upon by the medium in which they exist; bacterial mutations, however, move in a well defined circle, the type being always preserved. Dr. Rust considers the crowded houses of large cities, constructed, as it were, to exclude air and sun, the most fertile hotbed for bacterial life. He thinks the great mortality of infants in summer, from cholera infantum and other diseases of the alimentary canal, to be mainly due to the contamination of food, especially milk, which stands about in that pent-up vitiated air. He finds the sources of contamination in the bricked-up and walled-in houses of the wealthy, during the summer months, more numerous than in the most miserable suburban hut.

DR. JOSEPH S. WHITE, of Richmond, read a paper on the

RESULTS OF CLINICAL WORK AT THE RICHMOND EYE, EAR, THROAT AND NOSE INFIRMARY, WITH PRACTICAL REMARKS.

He referred only to eye work, and reported 3,729 cases, of which 2,857 were diseases of the anterior portion of the eye, and which ought to be diagnosed and treated by any practicing physician without reference to the specialist. Corneal diseases predominated over any other class, and were especially frequent among negroes. One thing of special interest in regard to this race was the fact that Dr. White had never seen, in all his experience, a case of tracheoma or granular lids among them. He gave the results of his experience as to the best treatment for the commonest affections of the eye, such as blepharitis, purulent ophthalmia, phlyctenular ophthalmia, etc. Under the head of *errors of refraction* he referred to the increase of nearsightedness among children from imperfect school hygiene, and to the importance

of correcting it. The operations performed on the eye in the institution were 1,227 in number. There were 102 extractions of cataract. All were successful in restoring useful vision except one case, which had partial atrophy of the optic nerve, resulting in complete atrophy. Four of the 102 cases were over 80, and thirty-two between 70 and 80 years of age, and all made good recoveries. Dr. White was of the opinion that extraction without iridectomy was not applicable to all cases, as some recent writers seemed to think. He also laid great stress on the method of opening the capsule, and entered into other details of the mode of operating. He has tried Michell's method of dressing in nine cases, and concludes that it is not suitable to childish or intractable patients, although he was much pleased with it in docile and tractable cases. Cocaine has been used in about fifty cases of cataract extraction, and other operations aggregating several hundred; and although 2 per cent., 4 per cent. and 10 per cent. solutions have been used with great freedom, he has never had any ill effects from it beyond a dizziness and abrasion of the epithelium of the cornea. He always dissolves it in a solution of bichloride of mercury (1 to 5000), and has never seen ulceration of the cornea from it.

Dr. John Grammer, of Halifax C. H., Va., offered a paper on *Some of the Obstacles to the Progress of Therapeutical Truth.*

Dr. Hugh M. Taylor, of Richmond, read a paper on

NERVOUS MIMICRY.

The first part of the report discussed mimicry of diseased joints. Cases representing the different phases and the differential diagnoses of such mimicries, and their intimate and important bearing upon the study and practice of gynecology, were reported. The second and most important division of the subject was the part the mind and imagination play in the production and augmentation of gynecological troubles, and the influence of mind over mind in their cure. Enccuragement is one of the most valuable remedial agents at the command of the gynecologist. If patients of a neurotic temperament can honestly imagine that they have a diseased joint, and suffer as much as they do; if they can "mimic" pregnancy, tumors, aphonia, deafness, blindness, paralysis, etc., then it is just as possible for them to concentrate their morbid imaginations upon some of the pelvic organs, and successfully mimic their common disorders.

It is no easy matter always to say positively that the reflex phenomena associated with, and, in most cases, attributed to, ovaritis, etc., are due to changes in the pelvic, and not in the digestive or nervous systems. This position is sustained by the frequent recoveries after Battey's operation has been advised to the patient. Dr. Taylor was satisfied that not a few such cases had been subjected to Battey's operation when there was no necessity for it. He has seen patients wearing pessaries who have no appreciable pelvic troubles; he has seen others consigned to a life of invalidism because they imagined that they had womb disease. He was satisfied that he had cured some such cases by assuring them that their cases were curable; by the administration of continuous and large doses of *encouragement.* A number of cases were reported in which recovery followed an impression made upon the patients, to the effect that they *would* get well, *were* getting well and, finally, *were well.* In not a few gynecological operations, some of the good resulted from the stimulus of hope infused by representations of the benefits to follow the operation.

Dr. A. Z. Koiner, of Roanoke, Va., read the report on *Advances in Hygiene and Public Health.*

Dr. Wm. W. Parker, of Richmond, read a paper on *Christian Burial versus Cremation*, to reply to a paper read last year by Dr. J. Edgar Chancellor, of Charlottesville, in which cremation was advocated.

Dr. I. S. Stone, of Lincoln, read a report on *Advances in Psychology and Neurology.*

Dr. Joseph Taber Johnson, of Washington, D. C., by invitation of the Society, presented a

HISTORY OF FOURTEEN CASES OF ABDOMINAL SECTION, WITH REMARKS UPON OVARIOTOMY, AND THE METHODS OF BRITISH OPERATORS,

as seen by himself during a protracted summer vacation this year. Of the fourteen cases, there have been twelve recoveries—one case being under observation at this writing. He thinks experience in this operation a great help to success. Most of the failures of authors have occurred in their earlier experiences. Much is attributable to the kind of operation performed; but much more to the *little things* in individual cases, which experience suggests are best suited to the case in hand.

Dr. Frank Donaldson, Jr., of Baltimore, Md., by invitation, read a paper describing his method of operating on nasal, post-pharyngeal and other growths, chiefly by means of electrolysis. He brought with him and exhibited an ingeniously contrived electrolytic battery, costing only $10, which could also be used as a galvanic battery, or to run electric light or sound electric alarm bells.

Dr. Archer Atkinson, of Baltimore, Md., by invitation, presented a paper on

BLIND EXTERNAL FISTULA,

which was well illustrated with the record of cases. After remarking upon the frequency of rectal diseases, the relative frequency of piles, fistulæ, etc., and the most frequent seat of fistulæ, he said that abscesses about the rectum were the most frequent causes of *fistulæ in ano.* He then referred to some of the general causes, gave a definition, and described some of the varieties of such fistulæ, etc., and concluded with some remarks on the importance of the subject for patients applying for policies in life insurance companies.

Dr. Charles M. Shields, of Richmond, read a paper entitled

EXPERIENCE WITH SOME OF THE MORE RECENT SUGGESTIONS IN THE FIELD OF OPHTHALMOLOGY.

Taking up first the method suggested by Dr. Hotz of treating granular lids by the process of squeezing out the contents of the trachoma follicles, he de-

scribed the way of accomplishing it with the thumbs or forefingers of both hands, but preferred a pair of forceps designed by Dr. C. H. May. They consist of two short blades, having their extremities expanded into an elliptical shape, and curved to correspond with the shape of the tarsal cartilages. The edges are rounded. After the lid is everted, one blade is passed between the lid and the eyeball, and the other over the everted mucous membrane. Steady pressure squeezes out the contents of the trachoma follicle, and very materially hastens a favorable result. He uses nitrate of silver or other astringents in conjunction with it. He very warmly advocated the use of massage in hastening absorption of opacities of the cornea. It is executed by placing one or two fingers over the closed upper lid, and making a rotatory motion of the lid over the cornea for two or three minutes, and repeating it every day or two. The method of dispensing with bandages and dark rooms in the after-treatment of cataract operations, and the substitution of a strip of isinglass plaster to unite the lids, was favorably commented on. In addition he suggested dispensing with the usual four or five days' confinement to bed, and, in proper cases, allowing more latitude in the matter of sitting up when such confinement is very irksome to the patient, and might occasion indigestion and lessened vitality. He discussed the use of the actual cautery corneal probe in obstinate ulcers of the cornea, and advised its cautious employment.

DR. PHILIP TAYLOR, of Richmond, read a paper on the

OPERATION OF EVISCERATION OF THE EYE, WITH THE PERMANENT INTRODUCTION OF A HOLLOW GLASS SPHERE,

of the proper size, which increases the rotundity of the eyeball, the movements of the glass eye, and the cosmetic appearance. He reported three cases.

DR. ROBERT J. PRESTON, of Abingdon, read a paper on

ELECTRICITY IN POST-PARTUM HÆMORRHAGE.

The sole objection that could heretofore be used against the recommendation was that we did not have time to get a battery. Now that objection is gone, as there are many portable batteries. Every accoucheur should carry an electrical battery with him to cases of labor, as it may be useful in other conditions than post-partum hæmorrhage. While other remedies may fail to contract the uterus promptly, electricity cannot fail to do so, and it acts *instantly* —as soon as the current is established. Its action, too, can be kept up for hours, if necessary, thereby securing permanent contraction of the uterus, without the risk of the nauseating effect of ergot, etc. Place one electrode over the lower portion of the abdomen, and the other over the symphysis pubis, and open the current, which will then pass directly through the uterus, and expel all non-adherent clots and other extraneous matter.

DR. B. M. WALKER, of Danville, reported a

CASE OF SALIVARY CALCULUS

which was somewhat unique as to the signs and symptoms. His remarks impressed the importance of surgeons and physicians paying more attention than they do to "these little things."

DR. R. A. LEWIS, of Richmond, read a paper on

MEDICAL EXPERTS,

showing that, while in some States, physicians called on to testify as experts can demand fees for such testimony, doctors of Virginia cannot decline to testify except at the risk of being charged with contempt of court. His paper concludes by urging legislative action to give the medical expert in this State the same protection of law.

DR. C. T. LEWIS, of Culpepper, read notes of

A CASE IN WHICH FOURTEEN INCHES OF THE SMALL INTESTINE HAD SLOUGHED AWAY

and passed *per rectum*, with a measurable degree of recovery of strength, etc.

The Society then adjourned to a magnificent banquet, where several hours were spent in feasting and toasting, after which the session was adjourned *sine die*.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, September 22, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

T. E. MCARDLE, M.D., SECRETARY.

DR. D. S. LAMB presented a specimen of

EMBOLISM OF THE BRAIN,

and read the following history of the case:

The history of this case so far as it can be obtained, is as follows: A mulatto woman died Aug. 28, 1886, age 65. It is said that four other members of her family had been affected and died in about the same way. About five years ago she was seized with right hemiplegia, from which she recovered. In January, 1885, she had a *second* attack, the same side as before. She breathed stertorously for about one week. For about two weeks she lay in a partial stupor, from which she could be roused for the moment. For about three weeks she had no use of her lower limbs; afterwards she gradually regained their use, but the foot always dragged a little. For about three weeks also, she had no use of her arm and hand; afterwards she regained their use, except in the case of the fourth and fifth fingers which remained powerless, showing that the central origin of the ulnar nerve was affected. Always after this second attack she complained of pain in the head in the region above the left ear.

About the 8th of August, 1886, her face became swollen and her speech thick. She also showed a disposition to repeat several times the terminal word of a sentence; for instance, "Are you going home, home, home?" The swelling, etc., continued until August 22, when the right arm became paralyzed and the leg dragged; there was also total aphasia. On

Monday, the 23d, she walked down stairs and ate a hearty dinner, using her left hand; she could not speak at all, and did not appear to understand what was said to her; she picked restlessly at the table-cloth and her dress. On Tuesday she could not get out of bed, and the pupils did not react to the light. On Wednesday Dr. Parsons saw her for the first time. There was then total loss of motion in the right arm and leg, and partial loss of sensation; the muscles of the face and tongue did not appear to be affected; but she lay in a stupor, breathing stertorously and unable to swallow; the pupils, however, reacted to light. On Thursday and Friday she continued in about the same condition; she still shut her eyes against the light. She was constipated and passed urine involuntarily. The unaffected side was in constant motion. She died on Saturday.

At Dr. Parson's request, I made a post-mortem examination the next day, August 29. The heat was so great and the surroundings such that the examination was limited to the head. The body was well nourished. The skull was thick; dura mater firmly adherent to skull along the longitudinal groove. The arteries generally, especially the larger ones, were much distorted and inelastic; their walls thickened and sclerosed in patches, and the calibre thereby somewhat irregular; a number of miliary aneurisms were seen; the arteries also contained red blood-clots, which in some places showed a slight adhesion to the wall; apparently small flakes of clot had formed on the inner wall (so-called parietal thrombi), and the remainder of the obstructing clot rapidly formed thereon. At the bifurcation of the left Sylvian artery the clot was paler and quite adherent to the wall, showing either that it was a thrombus formed before the others or was the result of embolism.

The brain was too soft to bear much handling; whether the result of the high temperature of the air or of the numerous coagula in the arteries I can not positively say; perhaps of both. On cutting into the left hemisphere a large sized irregular area of softening was found; it involved extensively the island of Reil and third frontal convolution; and the lower and deeper parts of the ascending frontal, and to a less extent the ascending parietal convolutions. The softening was coarsely granular. On stripping off the pia mater about three weeks after the necroscopy this membrane was found adherent to the convolutions named and in the corresponding situation. Portions of brain tissue were torn away in removing the membrane; the membrane itself not appearing diseased.

No other lesion was found; no cicatrix or cyst to explain the previous seizures; no hæmorrhage, either old or recent.

Nothnagel says that there is no clinical symptom characteristic either of hæmorrhage, embolism, thrombosis or syphilitic disease of the vessels of the brain. The concurrence, however, of right hemiplegia and aphasia indicating a probability of embolism of the left Sylvian artery and especially at its bifurcation, is further supported by this case. The fact that the woman's age is decidedly above even the ordinary extreme age of brain embolism makes this case more valuable to report, since her age at death is rather the age of hæmorrhage, and there was no trace of hæmorrhage anywhere. The softening of the left hemisphere was certainly due to the pale adherent Sylvian clot. I call the clot an *embolus*, because it is where it is; exactly where there is the most direct route from the heart and the swiftest current; and where, therefore, a clot coming up from below would most naturally be found, stopping at the bifurcation because too large to enter the branches of the bifurcation; this location is the location of emboli, and not of thrombi. It is true that no examination was made of the heart, and for the reasons stated. There was no symptom suggesting disease of the heart. If clots had been found in the heart or on the valves it would of course have favored the theory of embolism; if they had not been found that fact would not have antagonized the theory.

The formation of thrombi is favored by old age, with its slow pulse and disease of the arteries; we have these conditions here; thrombi form preferably, therefore, in the vertebrals and basilar, and not the carotids. At the same time I believe that some of the numerous red clots in these vessels are thrombi, because of their peculiar formation and adhesion to the vessel wall. The remainder may have been simply post-mortem clots. Cases of thrombosis of the arteries of the brain, giving rise to symptoms, are so rare that if this were such a case it would have particular value in that respect.

The adhesion of the pia mater to the convolutions of the left side suggests a possible relation to the left-sided headache of which she complained after her second attack.

Dr. Smith asked Dr. Lamb if there was any evidence of the first apoplectic attack?

Dr. Lamb replied that though one of the clots was evidently an old ante-mortem one, he did not think that it dated back as far as the first attack.

Stated Meeting, September 29, 1886.

The President in the Chair.

Dr. P. J. Murphy presented the specimen and reported a case of

EXTRA-UTERINE FŒTATION.

Dr. A. F. A. King said the Society was indebted to Dr. Murphy for the specimen presented. The case presents the usual characters and results as found in the books. It would be difficult to tell whether it was a case of tubal, ovarian, or abdominal pregnancy, or one of a composite character. From the fact that Dr. Chadwick treated it by electricity, he must have supposed it tubal. Abdominal pregnancies sometimes go to full term and are delivered by laparotomy.

Dr. Robert Reyburn had not heard the first part of Dr. Murphy's paper, but he would like to inquire whether it were wise, after a diagnosis was made, to let the offending mass remain. Would it not be better to remove it at once by laparotomy, as Mr. Tait is now urging?

Dr. Murphy did not know whether the fœtus had

been killed by electricity or died afterwards. Mr. Tait declares a tubal pregnancy cannot be diagnosticated before rupture occurs. In this case Dr. Chadwick made a positive diagnosis. Dr. Murphy did not at that time consider it a case of extra-uterine fœtation. As to the treatment, he thought he had adopted the only justifiable method. If he had performed abdominal section the woman would have perished.

DR. S. C. BUSEY said the case was interesting for several reasons. The diagnosis had been made early, electricity had been applied, the fœtus had been discharged and recovery had taken place. The case is unique as proving the correctness of the diagnosis and the result of the application of electricity by the discharge of the fœtus. In such a case there could be no thought of laparotomy. The treatment pursued was the proper one. We cannot, of course, decide whether the pregnancy was tubal or abdominal. Dr. King is perfectly correct in saying that abdominal pregnancies sometimes result in a living child at term.

After some further remarks by Drs. King, Murphy and Reyburn, the discussion was postponed until Dr. Murphy should receive a full report of the early history of the case from Dr. Chadwick.

DR. SWAN M. BURNETT presented the specimen and related the history of a case of

BLACK CATARACT.

The patient, a colored woman, about 65 years old, presented herself at his service at the Central Dispensary about two weeks ago. She said she had lost the sight of her eye two or three years ago. Dr. Burnett thought vision had been lost a longer time, but had not been noticed by the patient. The diagnosis of cataract is usually made with great facility, as the pupil presents a white or grayish appearance. In this case, however, the pupil was black. On examining with the ophthalmoscope an obstruction was discovered, but its nature was in doubt. Was it opacity of crystalline lens or was it in the fluid back of it? There was only one test, getting reflection from the surfaces of the crystalline lens. It is somewhat difficult to differentiate between black cataract and the effusion of blood into the vitreous chamber. The patient was sent to the Garfield Hospital and the lens was removed, cocaine being used. An iridectomy was first made. The incision was large and the lens came out in its capsule. No vitreous humor escaped. Complete recovery without reaction. The lens measured 8.5 mm. by 2.5 or 3 mm. Its size approximated that of the lens in the healthy state. This was the first case of black cataract that Dr. Burnett had seen, but in a week he again saw two in one patient.

Stated Meeting, October 6, 1886.

THE PRESIDENT IN THE CHAIR.

DR. JOHN B. HAMILTON exhibited a specimen of a calvarium removed from a patient at the Almshouse who had suffered from a

DEPRESSED FRACTURE OF THE SKULL.

The trephine had been applied unavailingly. The inner table of the skull was pushed inwards until an arch had formed, and pressure with the elevator could not replace the depressed portion, owing to the fact that pressure simply made the arch firmer. There were paralysis of the hand and tongue, and laceration of the dura mater. Nearly the whole of the squamous portion of the temporal, and adjoining portion of the parietal, bone on the left side were involved in the fracture. Dr. Chew has kindly furnished the notes of the case as follows:

Gotlieb Scheene, an inmate of the work-house, was struck on the head with a brick on Saturday, September 25, and was brought to the Washington Asylum Hospital about five hours afterwards. He had recovered from the shock and was conscious. There was a cut about two inches long on the left side of the head, with a marked depression of the skull of considerable extent directly over the Rolandic space. Pulse 40, respiration slow, pupils normal on both sides, and fixed. Facial paralysis on right side was marked. There was complete paralysis of the tongue, which he could protrude only with the assistance of his hands. On the next day he could protrude it, but there was paralysis of its right side. The treatment was at first croton oil, followed by calomel, by which he was freely purged, and then iodide and bromide of potassium. He continued in about the same condition until Monday night, Sept. 27, when Dr. J. B. Hamilton kindly consented to trephine. The operation was done Tuesday morning. Patient rallied well from the anæsthetic, and continued in the same condition until Wednesday night. He then became unconscious. There was paralysis of the right side. He gradually sank, and before death, which occurred on October 25, he became completely paralyzed.

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

Meeting of June 8.

DR. HOLMES IN THE CHAIR.

DR. H. STARKEY presented three cases of

CONGENITAL ECTOPIA LENTIS,

with the following histories: Mrs. Joseph Peltier, widow, age 44. Congenital ectopia lentis of both eyes. Motility of eyeballs slightly diminished. Tension normal. Right eye lens cataractous; vision = perception of light; left eye, vision = $\frac{20}{200}$ with +5.5 D. = $\frac{20}{50}$. Ophth. ex. Fundus normal. Accommodation *nil;* lenses dislocated upwards and backwards; irides and lenses quite tremulous. The patient was given + 5.5 D. for the distance, + 9 D. for close work.

Gertrude Peltier, daughter, age 16. Double ectopia lentis backwards and upwards, with tremulous irides and lenses. General health good. Slight photophobia. Vision R. E. $\frac{4}{50}$, with + 7 D. = $\frac{20}{30}$; vision L. E. $\frac{2}{50}$, with + 7 D. = $\frac{20}{70}$. Accommodation of

both eyes = 0. Tension normal. Ophth. ex. Fundus normal. Given + 7 D. oc. u. for distance, + 12 D. oc. u. for reading.

Aaron Peltier, son, aged 7. Both lenses dislocated upwards and backwards. Tension normal. Ophth. ex. Fundus both eyes normal; motility of eyes impaired, irregular, and discordant. Accommodation = 0. Vision R. E. = $\frac{20}{120}$ with + 8 D. = $\frac{20}{60}$; vision L. E. = $\frac{20}{120}$ with + 8 D. = $\frac{20}{50}$. Prescribed + 7 D. oc. u. for the distance. Another son, aged 16, had been examined by Dr. Boerne Bettman, who found both lenses likewise dislocated upwards and backwards.[1] The boy's vision was materially improved by a + 8 D. lens for each eye.

Dr. W. T. Montgomery read a paper on

OPERATION BY LIGATURE FOR ENTROPION OF LOWER LIDS.

About two months ago an old man came under my care, who was suffering from complete inversion of all his eyelids and marked narrowness of the palpebral fissures. These conditions had existed for a considerable time, so that the patient was almost blind from pannus. Under ether I made canthotomy on both eyes and Hotz's operation on both upper lids, intending to make this latter operation on both lower lids. Owing to the tediousness of the Hotz operation, and to the fact that it is not nearly so effectual in correcting entropion of the lower as of the upper lid, it occurred to me to try the effect of a ligature introduced as follows: A strong curved needle was threaded with No. 9 surgeon's silk, and introduced at a point 4 or 5 mm. below the puncta, and passed deeply through the tissues of the lid and brought out at a point 4 or 5 millimetres below the outer extremity of the lid. The included tissue was then firmly ligated. The inverted lid was completely everted, but the ligation produced such an unsightly puckering up of the lid that I was tempted to remove the ligature, but did not. Both lower lids were treated in the same manner. The ligatures were removed on the third or fourth day, or soon as suppuration began, and the unsightly puckering soon disappeared, the lids assuming a natural position. This patient remained under observation about one month, and there was no appearance of return of his entropion.

I have made the operation about fifteen times, with very satisfactory results so far. It has only failed in correcting the entropion in one case, and this was such an aggravated one that I was not surprised at failure at the first attempt. I have ligated again, and the lid is now everted. The effect of the ligature is modified by the amount of tissue included. It is too early yet to speak assuredly of the ultimate success of this operation. I have not the temerity to call it new. I can only say it is new to me, and being so very simple, if it is even as successful as other operations in correcting entropion of the lower lid, it commends itself.

Eugene Daoust, aged 27; baker, 77 Stanton St. Ten years ago he received a blow on the left eye with the fist or some blunt instrument, which knocked him down. In falling the left temporal region struck the flat surface of a stone. Considerable swelling and ecchymosis of the lids followed these injuries, but soon began to clear up, and in a short time there was only a slight thickening of the lids remaining. This slight thickening did not noticeably change until about three years ago, when it began to gradually increase, and the surface assumed a knotty appearance. The trouble, though slowly increasing, had not given the patient any inconvenience, except its unsightly appearance, up to the time I first saw him, December 4, 1885. At this time the upper lid was so much thickened that there was almost complete ptosis. The external surface presented a markedly nodular and purple appearance, due to varicose enlargement of blood-vessels. On the inner surface of the upper lid, near the external angle, was found a varicose nodule the size of a pea. The entire palpebral conjunctiva presented an engorged appearance. The lower lid was also considerably thickened by the varicose engorgement. Decided pulsation was felt over the entire upper lid and extending into the temporal region on this side, but was most marked over the outer angle of orbit and over the supraorbital foramen. Firm pressure at these points arrested pulsation in the lid and lessened the vascular engorgement.

I informed the patient that I thought an operation —ligating the principal branches of the anterior temporal artery and the supraorbital artery, with the free use of the electrolysis needle—would relieve him, but was not sure of effecting a cure by these means. Though I endeavored to impress upon the patient the importance of the trouble and urged him to have the operation performed, I did not see him again until May 9. He then stated that three weeks previous, the nodule on the inside of the lid ruptured, and he almost bled to death before he could get it stopped. Dr. J. J. Angear, who was called to see him at the time, has since informed me that he attempted to ligate the main branch of the temporal subcutaneously, but this did not stop the bleeding, and he then ligated the ruptured vessel on the inside of the lid. Dr. Angear was of the opinion that the varix was largely supplied by branches of the lachrymal artery, and that ligation of the common carotid would have to be made. At the time of the second visit of the patient to me the condition of the lids was not materially changed, but the patient was still anæmic and weak from loss of blood. I advised the operation that I had urged in the first place, but warned him that it might be a failure, and that ligation of the common carotid would possibly have to be made. The patient acquiesced, and May 11, under ether, four subcutaneous ligatures, one including the pulsating branches of the supraorbital and three along the course of the temporal branches, were applied. The first of these was introduced at the outer rim of the orbit and the other two at intervals of one-fourth of an inch towards the temporal region. After the sutures were introduced pulsation was only detected at the outer extremity of the lid in a small area. A fine electrolysis needle was then inserted

[1] In all the individuals, the lenses were dislocated upwards and forwards, the lower edge being tilted backwards.

about a dozen times in different directions through the engorged tissues of the upper lid. Cold water dressings were applied, and the patient was ordered to be kept quiet in his room and friends were warned of the possibility of secondary hæmorrhage. Considerable reaction followed the operation. The ligatures had all come away by the end of twelve days without any hæmorrhage, and by the end of three weeks the swelling had subsided to a degree less than existed before the operation. The surface of the lid is now smooth. Pulsation is still felt over outer rim of orbit, and lids yet much thickened.

June 1st. Without anæsthetic I again used electrolysis freely, but little reaction followed. At present, June 8, the lids have not entirely recovered from the last operation, but I think it is safe to say that it will be followed by further improvement.

It is still a question as to whether a cure will be effected by the means instituted, or not, I present the patient for your inspection and advice. I am encouraged to give further trial to electrolysis. We all know that ligation of the common carotid is a hazardous operation, and is not always successful in curing aneurism about the orbit.

There is no doubt about the aneurism in this case starting from the injury of ten years ago, and it is my opinion that the injury was primarily to branches of the middle temporal. It was upon this opinion that my hope of benefiting the patient by the treatment detailed was based.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Reports on Cholera—Cholera in Europe in 1884 and 1885—The Inspection of Ports—The Origin of Cholera.

A supplement containing Reports and Papers on Cholera, submitted by the medical officer of the Local Government Board, has just been issued in connection with the fifteenth annual report of that department. This bulky volume, in addition to the report of Dr. Buchanan, contains a voluminous appendix. To this Dr. Thorne contributes an account of cholera in Europe in 1884 and 1885. He also reports the proceedings of the International Sanitary Conference, held at Rome in the last-named year. Dr. Ballard writes regarding the sanitary survey made in England in anticipation of cholera outbreak in 1856–86. Dr. Blaxall reports on the like inspection of ports and riparian districts, and Dr. Klein concludes the volume with an interesting paper on the question of cholera as a germ-produced disease. In one way this Report is highly reassuring in respect of the sanitary state of our islands, and of the adequate character of the administration which has the duty of controlling sanitary matters. If cholera, as is most unlikely, should ever gain a foothold in England as a foreign importation, willing and able to flourish on British soil, it will have to reckon with an active and efficient board of health supervision, to the want of which, in foreign lands, the continuance of epidemics is largely due. As regards actual cholera attack in England, Dr. Buchanan tells us that as far as the year ending March 31, 1886, was concerned, cholera was practically unrepresented in this country. On one or two occasions only choleraic cases were witnessed in the persons of sailors who had hailed from Mediterranean ports. The disease did not spread to any person, and in this statement lies cause for congratulation. Contrasted with what happens, or rather is allowed to happen, in Italy, Spain, Austro-Hungary, and even in France, this rigid supervision of even suspicious cases of choleraic nature in England is a gratifying feature. The Local Government Board, through its medical side, evidently takes care that such action shall never be wanting throughout England.

In his report on Cholera in Europe Dr. Thorne Thorne incidentally reports the great lesson which foreign nations, it would appear, have yet to be taught, viz: that it is to filthy surroundings and to the want of care in ensuring a pure water supply that the repeated attacks and continuance of cholera are due. Dr. Buchanan himself reiterates this wholesome teaching. His words are worth remembering: "The views of England concerning cholera in Europe," says the medical officer of the Local Government Board, "obtained from her own experience and strengthened by what she can learn of other countries, are that for European countries which have secured their soil, water and air against befoulment, there is little or no danger of cholera, no matter though the disease be brought into their midst." He urges that England puts her trust in measures which will secure purity of air, earth and water. This is really all that is needed to avert cholera epidemics, but it is precisely such conditions of cleanliness that are wanting in Continental regions. The local measures for cholera prevention, too, are worthy of remark. When a case of the disease occurs in England no restrictions are imposed, as on the Continent, on traffic between the infected district and other parts of the country. For one thing, the disease is never allowed to assume a diffused or epidemic form. Quarantine, in Dr. Buchanan's view, is utterly needless in face of the ordinary care and precaution with which the beginning of cholera epidemics should invariably be treated. It would seem, however, that English views of cholera-prevention, plain and effective in operation as these opinions are, do not meet with the approval of Continental authorities. This much was seen on the occasion of the Sanitary Conference in Rome. The objections of foreign authorities may be dismissed with an expression of genuine pity for the sanitary ignorance, or the equally reprehensible bigotry, that refuses to see in the tried and proved English measures against cholera, the universal safety of the nations at large.

The question of the exact origin of cholera is one which has frequently been discussed, and Dr. Buchanan reverts to the subject in discussing the report of Dr. Klein, which is included in the volume just issued. Dr. Koch, it will be remembered, in 1883 and 1884, declared his belief, formed as the result of

cholera researches undertaken in India, that the disease was due to certain bacilli or living germs, which he found abundantly in the secretions of cholera-stricken bodies. The difficulty of accepting Dr. Koch's views arises, as Dr. Buchanan points out, from the fact that while in other germ-produced diseases these living particles are found in the blood and in the tissues of the affected body, no such evidence is at hand regarding the so-called cholera bacillus. In other words, while the bacilli are present in the digestive system, they are not found in the blood, and this latter situation is precisely that which they not only affect in other germ diseases, but is also one which it would be expected they should specially occupy in the case of a sudden and fatal ailment like cholera. The English commission which was sent to India to study this question of cholera causation, arrived at opposite conclusions to those advanced by Dr. Koch. They found, indeed, that Koch's bacilli were rarely, if ever, absent in cholera cases, but that they were the cause of the attack the English commissioners unhesitatingly deny. It is more than probable that the germs in question are present even in healthy bodies. One authority asserts that these microscopic particles are natural denizens of the healthy mouth and normal digestive system. As matters stand, Dr. Buchanan declares we are in the same position as before, of ignorance as to what may be the relation of cholera to bacterial or germ life. This conclusion, it will be noted, by no means excludes the possibility, or indeed the probability, that cholera is germ-produced. It really stands in the same position as small-pox or scarlet fever. Even if Dr. Koch's views are unacceptable, that is no reason why the future should not demonstrate the real facts of the case. Dr. Snow, in 1849, was very forcible in his declaration that to water polluted by cholera and typhoid excretions we owe the continuance and dissemination of these diseases. Dr. Buchanan would have it remembered that Snow's conclusion remains sound and unopposed at the present time, and this although it is at present impossible to point to the exact nature of the cause or material to which the pollution of water supply is due.

Mr. George Lawson, F.R.C.S., has been appointed Surgeon Oculist to Her Majesty, *vice* Mr. William Cooper, deceased. G. O. M.

DOMESTIC CORRESPONDENCE

PUERPERAL SEPTICÆMIA.

To the Editor of the Journal:

Dear Sir:—Some errors occur in the report given in The Journal of November 13, of my remarks upon puerperal septicæmia, before the Virginia State Medical Society, two of which please allow me to correct. I expressed a preference for Bozeman's catheter over Chamberlain's tube when intra-uterine injections were indicated, and for Hegar's rather than Molesworth's dilators, if previous dilatation of the os was required.

I did not admit, in reply to Dr. Wellford, that the puerperal condition, so far as any blood-changes were concerned, was an essential factor in the production of septicæmia, but that the wounds of the genital canal or of the interior of the uterus were necessary conditions for the entrance of the infection—without a wound no poisoning occurs, no matter what alterations of the blood induced by pregnancy or labor may be present. Respectfully,

Theophilus Parvin, M.D.

Philadelphia, November 15, 1886.

NECROLOGY.

Mrs. Charlotte Mills Stephenson, wife of Dr. Robert Stephenson, of Adrian, Michigan, died November 4, 1886. She was born in Macclesfield, England, June 18, 1828. She came with her parents to Adrian, Mich., in 1838, and was married to Dr. Robert Stephenson in 1851. The deceased was an earnest Christian woman, zealous in all good works, and beloved by all classes of society. She was one of the principal founders of the Ladies' Library Association of Adrian, and was one of the Board of Directors at the time of her death. Dr. Robert Stephenson has been a member of the American Medical Association since 1876.

The Death of Dr. Julius F. Miner, of Buffalo, N. Y., has been announced during the present month. Dr. Miner was born in Peru, Mass., in 1823; graduated in the Albany Medical College in 1847, and became a resident of Buffalo in 1855, where he acquired a high professional reputation and extensive practice. For several years he occupied the chair of Special and Clinical Surgery in the Buffalo Medical College, and was one of the editors of the *Buffalo Medical and Surgical Journal.* He has been a member of the American Medical Association since 1864, also a member of the Medical Society of the State of New York, and of the local Medical Societies of Buffalo and of Erie County.

INTERNATIONAL CONGRESS.

Ninth International Medical Congress.—*Office of the Executive Committee.*—In response to various questions from European correspondents as to the *time* absolutely required for attendance on the Congress, it is now stated that it is *possible* to do it in thirty days; say ten days voyage out, ten days in the United States, and ten days return voyage. The session of the Congress will occupy six days. Reduced rates of travel are in contemplation, and will be hereafter published. Henry H. Smith, M.D.,

Chairman Executive Committee.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Sec-

retary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

MISCELLANEOUS.

THE BUFFALO CREMATORY.—There has been erected in the City of Buffalo a temple for the incineration of the remains of those whose last wishes in regard to the disposal of their bodies were in favor of cremation, whose æsthetic surroundings please the most difficult taste. The location of the building is in the most beautiful part of the city—about twenty minutes' drive from the city hall, out Buffalo's far-famed Delaware avenue, and fronting one of the most beautiful cemeteries in the United States—Forest Lawn. The idea of those interested in its location and construction has been, to so arrange all the little details, as to render as light as possible the task of the sorrowing one who is left, not only to mourn the loss of a dear friend, but also to dispose of the remains in a manner least grating to the individual feeling and least harmful to the many.

The crematory is built of dark-brown sand-stone, in a plain, substantial style, reminding one of the small chapels built in the north country centuries ago, with square tower and steep slanting roof, covered with ivy and surrounded by sloping lawns. While the hearse conveys the body to room where the undertaker removes it from the coffin and places it upon a bier, the relatives and friends enter the chapel, while the clergyman passes behind the organ to take his place in the chancel. The bier rolls noiselessly into the chancel, the organist begins a prelude to a chant, the ceremony takes place according to the desires of the survivors. The surroundings present the ordinary aspect of an earth-burial ceremony at a church. The body lies on a handsomely draped bier in the chancel. The chancel is beautifully decorated in an early Italian style. There are twenty-one different symbols and devices interwoven in arches of peacock-green and blue, while the windows, of rich stained glass, shed a light, dim and religious; the nave, too, is decorated in the same style. All the surroundings combine to show respect for the dead, while respecting the feelings of the living. The service over, the curtains are withdrawn, and the bier glides noiselessly out of the sight of the congregation. The crowd disperses, the incineration takes place privately, and the ashes are taken by the undertaker, to be disposed of as the body would have been or left to form the nucleus of a columbarium.—*Sanitary News*, Nov. 13, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 6, 1886, TO NOVEMBER 12, 1886.

Major J. P. Wright, Surgeon, from Dept. Texas to Dept. Mo. for duty as attending surgeon at Leavenworth Military Prison Ft. Leavenworth, Kansas.

Major W. H. Forward, Surgeon, from duty as attending surgeon Hdqrs. Div. of the Missouri and examiner of recruits at Chicago, Ill., to Dept. of Dakota.

Major V. B. Hubbard, Surgeon, from Dept. Arizona to duty as attending surgeon at Hdqrs. Div. of the Missouri, and as examiner of recruits at Chicago, Ill. (S. O. 257, A. G. O., Nov. 4, 1886.)

Capt. L. Y. Loring, Asst. Surgeon, sick leave of absence further extended three months on surgeon's certificate of disability. To be relieved from duty in Dept. Cal., and, on the expiration of his present sick leave of absence, will report by letter to the Surgeon-General of the Army. (S. O. 262, A. G. O., Nov. 10, 1886.)

Capt. E. B. Moseley, Asst. Surgeon, assigned to duty as attending surgeon in San Francisco, Cal. (S. O. 94, Div. Pacific, Nov. 1, 1886.)

Capt. Harry O. Perley, Asst. Surgeon, granted leave of absence for four months, on surgeon's certificate of disability. (S. O. 257, A. G. O., Nov. 4, 1886.)

First Lieut. Chas. C. Barrows, Asst. Surgeon, ordered to report to commanding officer St. Francis Bks., St. Augustine, Fla., for duty at Ft. Marion. (S, O. 180, Div. Atlantic, Nov. 10, 1886.)

First Lieut. Jno. L. Phillips, Asst. Surgeon, granted leave of absence for one month, with permission to apply at Hdqrs. Div. of the Missouri for an extension of one month. (S. O. 116, Dept. Dak., Nov. 2, 1886.)

First Lieut. Chas. B. Ewing, Asst. Surgeon, ordered from Ft. Supply, Ind. Ter., to Ft. Leavenworth, Kans., for duty. (S. O. 126, Dept. Mo., Nov. 6, 1886.)

First Lieut. Francis J. Ives, Asst. Surgeon, ordered to proceed to and take station at Ft. D. A. Russell, Wyo. (S. O. 145, Dept. Platte, Nov. 4, 1886.)

PROMOTION.

Capt. Robt. M. O'Reilly, Asst. Surgeon, to be Major and Surgeon, Nov. 1, 1886, vice Clements, deceased.

APPOINTMENTS.

Paul Clendenin, First Lieut. and Asst. Surgeon, Nov. 5, 1886.

Chas. L. G. Anderson, First Lieut. and Asst. Surgeon, Nov. 5, 1886.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE THREE WEEKS ENDED NOVEMBER 13, 1886.

Ames, R. B. M., P. A. Surgeon, relieved from duty at Marine Hospital, New York, N. Y., to assume charge of Marine Hospital, Vineyard Haven, Mass. Nov. 1, 1886.

Urquhart, F. M., P. A. Surgeon, to proceed to Norfolk, Va., for duty. Nov. 4, 1886.

Yemans, H. W., P. A. Surgeon, relieved from duty at Marine Hospital, San Francisco, Cal.; to assume charge of the Service at Galveston, Texas. Nov. 1, 1886.

Wasdin, Eugene, P. A. Surgeon, when relieved, to proceed to New York, N. Y., for duty at Marine Hospital. Nov. 1, 1886.

Williams, L. L., Asst. Surgeon, relieved from duty at Marine Hospital, Wilmington, N. C.; to proceed to Pittsburgh, Pa., for temporary duty. Nov. 5, 1886.

Perry, T. B., Asst. Surgeon, relieved from duty at Marine Hospital, St. Louis, Mo.; to proceed to San Francisco, Cal., for duty at Marine Hospital. Nov. 1, 1886.

Ames, R. P. M., P. A. Surgeon, to proceed to Vineyard Haven, Mass., as inspector. Nov. 10, 1886.

Urquhart, F. M., P. A. Surgeon, granted leave of absence for seven days. Nov. 8, 1886.

Wasdin, Eugene, P. A. Surgeon, granted leave of absence for seven days. Nov. 11, 1886.

Magruder, G. M., Asst. Surgeon, relieved from duty at Norfolk, Va.; assigned to duty at Marine Hospital, Chicago, Ill. Nov. 10, 1886.

UNITED STATES ARMY MEDICAL DEPARTMENT

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, NOVEMBER 27, 1886. No. 22.

ADDRESSES.

SOME OF THE CAUSES OF THE DISEASES OF WOMEN.

The Annual Address before the Chicago Gynæcological Society by the Retiring President,

DANIEL T. NELSON, M.D.

OF CHICAGO.

Another year of the history of our Society has completed its cycle, and it is well for us to briefly review its history, and profiting by the past experience, arrange more comprehensive plans for its future usefulness.

While the fountain does not rise as high as its source, the usefulness of a Society like ours is really greater than the combined work of its individual members; for I am sure we have all appreciated, during the past year, that there has been a reflex benefit to each of us from the work and discussions of the Fellows which does not appear on the records.

The work of the past year, I am sure you will all agree with me, has been the best in the history of our Society, both in quality and number of the papers presented, and in the attendance and character of the discussions.

The partially inaugurated plan of discussing special subjects at stated meetings, with papers carefully prepared upon these topics to guide in the discussion, is believed to be a good one, as a sufficient time is likely to be given to the paper to make it worthy of careful discussion, and, as we have seen, these discussions are likely to be of value not alone to ourselves, but to the whole medical world. And the stimulus to good work in the preparation of the papers is not the least advantage of the plan.

These special topics need not debar volunteer papers, reports of cases, and the like, as either or both may be made the order of business at any meeting by vote of the Society, or extra meetings may be held, as this year during the vacation, when two extra meetings were held (July and August). The plan, it is believed, will increase the quantity of the material presented to the Society, and improve its quality.

It is recommended that the officers of the Society, the President, the two Vice-Presidents, the Secretary, and Editor, or other committee of five, be elected at each annual meeting, to constitute an Executive Committee, whose duty it shall be to arrange the topics of business for each meeting, and notify the Secretary in time to give due notice to the Fellows, and so far as possible report to the Society the papers and topics for discussion at least quarterly in advance, making such changes from time to time as they may deem advisable or the Society may direct.

And I would raise the query, Can this Society in any way stimulate a greater amount of original research in our department of medicine? Would a prize of $25 or $50, offered under proper restrictions, each year, bring out any good original investigations among our members? And need it be confined to our own membership, provided the work be meritorious and within the scope of this Society? If the plan seems wise, would it not be better to raise the fund needed by subscription rather than by taxation?

No more fruitful topic for research, and hardly one more difficult, could be proposed than the Diseases of the Placenta, for even its anatomy and physiology are believed by some not to be fully established. Would not a better knowledge of the diseases of this organ explain many of the miscarriages and still-births which are not now even attempted to be explained? If the causes were understood, might not the means of preventing be found out?

Some preventive measures have been discussed during the past year, such as the prevention of the laceration of the perineum and cervix; but there is still a legion of ills which may be termed reflex diseases—the headaches, the backaches, the hot flushes, the chills and sweating, the palpitation, the fainting, the difficult breathing, the dyspepsia, the constipapation, the anæmia, the neuralgia, or in a word, the hysteria, or if you prefer, the neurasthenia. Are these diseases increasing? Would we could hope they were not! But can they not be prevented? And where is their primal cause, and what the prevention? Why the dysmenorrhœa, spanmenorrhœa, and the amenorrhœa? Why the displacements, the cellulitis, and the peritonitis? the tumors, both fibroid and ovarian? Are there not causes for these diseases which can be found out, and being known, the diseases avoided? And would not these be grander achievements than have been accomplished by a McDowell, a Sims, a Wells, or a Tait? More lives would be saved, more suffering would be prevented, more children would be born. The State would be enriched and the individual made better and happier. Said the late Dr. Samuel D. Gross, not long before his death, at the dedication of the McDowell monument: "Young men of America, listen to the voice

of one who has grown old in the profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariotomy or lithotomy, or a hip joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets.

"The day has arrived when the people must be roused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection, as well as for the better development, of their physical, moral and intellectual powers. This is the great problem of the day, the question which you, as the representatives of the rising generation of physicians, should urge, in season and out of season, upon the attention of your fellow-citizens; the question which alone and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation."

While like begets like, largely, yet with proper care the children may be *better* than the parents. This has been accomplished in numerous instances among the lower animals, and why should it not be with the highest and most intelligent animal, man, if the same care were exercised?

Among the Jews the physician is frequently consulted before matrimonial alliances are contracted. Other denominations would do well to adopt this salutary custom, for if rightly carried out, it would prevent much disease and suffering among the contracting parties and their offspring.

While hereditary diseases may not be entirely prevented in children, yet if carefully watched and properly treated, the tendency may be largely overcome, especially if the children are so closely watched that the beginnings of disease are noticed, for there are few diseases which are not curable if taken in their incipiency. And in the present state of our knowledge are there not few diseases whose cause is really unknown, and therefore not preventable?

The causes of disease in woman may be conveniently arranged, as regards time, under the heads: 1. The diseases of puberty; 2, of menstrual life; and 3, of senility. The foundation for not a few of the pelvic disorders is laid during puberty, which is not to be considered simply the date at which the menses first appear, but rather the whole period required for the development of the sexual organs, the completion of which process is marked by the appearance of the menstrual discharge. No one who is familiar with the diseases of woman will doubt that a large percentage of these diseases, beginning at puberty or soon after, are continued with a varied history during the life of the patient, being increased or decreased according to the patient's good fortune, or perchance from treatment.

It seems to me Dr. Nathan Allen, of Lowell, Mass., has very tersely enunciated the correct basis upon which rests the "Laws of Health and Longevity," and the "Laws of Population and Human Increase," namely, upon a normal anatomy and physiology—"a perfect development of all the organs of the body, so that there shall be a perfect harmony in the performance of all their respective functions." No one of our organs is unimportant; not one can be left out or weakened in its functional activity without the whole body suffering loss, and no one can be perfect without perfection in all the rest.

There is, I know, a law of compensation, whereby if one organ or system of organs is disabled or overworked, another will try to aid it to do its work, as the skin and alimentary canal when the kidneys are disabled, or the fingers and the ear when the eyes are useless; but these are conditions of disease, not health; of pathology, not physiology.

Tried by this law, then, what are the conditions necessary for the normal development of the reproductive organs? Plainly, the normal development and activity of all of the other organs and systems of organs, and conversely, the other systems of organs can only attain their highest functional activity when the sexual organs are perfectly developed. During the period of puberty, then, from 10 to 18 years, or more commonly from 12 to 16, do we ordinarily find the girls in our families possessed of an alimentary, glandular and vascular system sufficiently developed and so normally active that a healthy blood, containing in quantity and quality just the pabulum needed, is carried to each tissue? During these years of puberty which we are considering, the teeth begin to break down, in not a few instances, and as the result digestion is impaired.

But why do the teeth so often decay in girls at puberty and during early married life? Why is it, for example, that the German, Swede and Norwegian girls who come to this country with model teeth and are the picture of health, unless we except the light complexion of the Scandinavians as hardly compatible with the most robust health—why is it that these girls live in our families but a few years before their teeth begin to decay, and they lose the fresh bloom of health which they brought from their native land? And then, if they marry and bear two or three children, they are almost a wreck; their teeth are so decayed as to be of no use for mastication. They are poor and feeble, pale and anæmic, old and haggard, but the shadow of their former selves; in the best possible condition to receive and develop almost any form of disease, tuberculosis and the like. Why this change? It is not simply the change in their habits of life and the climate, though these have doubtless had their influence; but I believe a far more important cause will be found in the quality of their food. The quantity of the food they consume is probably greater than what they would get in the old country; but is the quality as appropriate for the nourishment and development of *all* the tissues? I believe not. For while the carbonaceous and albumenous foods are eaten in greater quantity, the *inorganic* is deficient, and here is an important source of weakness and decay, as I believe. The inorganic portion of the wheat is largely removed in the process of grinding, leaving only the starch and some of the gluten in the white flour which is eaten. While the brown bread from the coarser flour and from rye, which was formerly used largely in this country, and is still in most foreign countries, contained far more of the inorganic sub-

stances necessary for the development and nutrition of the bones, the teeth, and other important tissues, and as the result, the teeth erupted earlier, were better formed, and did not decay as readily, the bones were better developed, and all the tissues firmer.

During pregnancy, if the inorganic foods are not furnished the mother in sufficient quantity, the fœtus will even take it from the bones, and especially the teeth, of the mother, for all the tissues, the softest as well as the hardest, must have inorganic food, and while these resources of the mother are freely drawn upon the deficiency may be so great that both the mother and child suffer for the want of them. But it is the rule that the mother will suffer first from the deficiency, her stomach will be disturbed, indigestion, heart-burn, and the like, and her teeth will decay and break away before the tissues of the fœtus will seem to suffer. But these symptoms may usually be readily relieved by giving the mother a sufficient quantity of the lime and magnesia salts—in other words, furnishing her with a sufficient quantity of inorganic food.

And the developing tissues of infancy and childhood need more food of all kinds, the inorganic included, than the simply working tissues of adult life. So during puberty the girl needs more of this food for the proper development of the reproductive organs, a whole system of organs developing within a few years. To insure, then, a normal development of the sexual organs at puberty, there must be a suitable supply of *all* kinds of food, and not the least, the inorganic.

Among our American girls there is another important cause of imperfect development, and consequently abnormal functional activity of the generative organs, in the *style of dress* now so nearly universal, consisting essentially of the tightly fitting *corset*, with equally tight outer clothing—for even if the corset may seem to be loose when first applied, and they are never acknowledged to be tight by the wearer—yet it must and does prevent the expansion and development of the lungs and the muscles of the back and abdomen. It displaces the liver and stomach upward, and presses the abdominal viscera downward upon the pelvis, compressing these organs during the important period of their development, and laying the foundation for the congestions, the pelvic inflammations, the flexions, the displacements, and perhaps even the ovarian and fibroid tumors of later years. Among girls of foreign birth the corset is not generally put on until the changes of puberty are complete, consequently its evil effects are not seen as early, usually not until several years of menstrual life, or even after marriage. But our American girls are not *dressed* without the corset, even *before* puberty, so they have its evil effects during puberty, during menstrual life, and generally during the rest of their lives.

Not only does the corset prevent the development of and displace the important organs of the thorax, abdomen and pelvis, but it either alone, or with ingeniously contrived additions, is made to compress and prevent the development of the mammary glands, while it seems to enlarge them.

Dr. DeWolf tells us that statistics show that half of all the deaths are children under five years of age, and that while forty per cent. of all the babies born in the United States die in infancy, only eighteen per cent. die during the same period in Norway.

The chief reason for this frightful difference in the mortality is doubtless due to the fact that so many more mothers can nurse their children in Norway than in the United States, for I will not believe that there are many mothers in any country *who will not* nurse their children when they can. Corroborating and explaining these statistics is the statement that 10,000,000 of nursing bottles were made in this country during the last year. How many were exported and how many more were imported is not stated. Neither are we told how many *tons* of infant foods were manufactured in the United States and imported during the same period. Surely, all must acknowledge that very many of our American mothers cannot nurse their children, or only for a very short period, and that this is one of the important causes producing this frightful mortality among our children. Have we explained in part the reason for this? If so, the remedy is evident.

But so long as the corset is in favor, the gynecologist and the undertaker will thrive, and the wet nurse will be in demand.

But other systems are needed to complete the harmony necessary to the perfect development of the reproductive organs at puberty, beside the alimentary, the vascular, and the glandular. The muscular and the nervous systems have most important functions to perform. Physiologists estimate that the voluntary muscles normally require from one-third to one-quarter of all the blood for their nutritive and functional activity, and *vice versa*, healthy and active muscles are required for a normal blood, which shall be rich in the pabulum needed for the developing tissues. And here our American girls usually fail as puberty approaches, their muscular exercise is restricted, they are confined within doors and their time given to music, drawing, painting, and receiving friends, instead of the more active pursuits which would continue the development of the muscular system, while it aided alimentation; or perhaps what is worse, their time is devoted largely to study, thus calling into undue activity the nervous centres, and so developing the whole nervous system that this is ever afterward the dominant system.

The recent innovation of the manual training schools for boys is in the right direction for them, that their muscles may be developed and trained while their minds are being educated. And is there not an even greater need for similar schools for girls, that their muscles may be developed to correspond with the other organs? As during pregnancy, the developing fœtus excites to activity all the other organs and systems of organs, and they in turn furnish the material needed for its further growth, so at puberty the growing sexual organs furnish a new stimulus to activity for all the tissues, and they in turn will exert an influence for good or ill upon these developing organs.

Dr. J. M. Toner, of Washington, D. C., who has

compiled some valuable tables showing the birth and death rate in different States and at different periods of time, says: "With a desire to view this question of birth-rate from a standpoint that would be sufficiently comprehensive, and yet free from even the appearance of preconceived notions or sectional partiality, I have made something of a study of what the records of the U. S. census of 1870 teach upon the subject of population, in its enumeration by ages; also of the births, deaths, etc. From this source I find undoubted evidence of a gradual decline in the population of children under 15 to the number of women between 15 and 50 years of age in our country. I do not propose to adopt any theory or to explain this extraordinary condition. But it is proper that the profession and the country should be made acquainted with the facts, and made to realize that the American people in this particular are showing unmistakable signs of physical degeneracy.

"I have," he says, "embodied facts only, and leave the enlightened understanding of the American people to assign the reasons, from the evidence everywhere around them, and to supply the remedy."

Do not the statements we have made point to some, at least, of the causes of this degeneracy? 1st. In the food not being appropriate for normal development. 2d. In a style of dress which hinders the development of several systems of organs; and 3d. In such habits of life that some systems of organs are developed out of proportion to the rest.

Says the Hon. Francis A. Walker, after comparing the increase in population during the decades 1840–50, and 1850–60, with the increase from 1860–70, the increase should have been three to four millions more. The lack of increase is in part accounted for by the loss of increase of about half a million of colored people, on account of the change in their liberation from slavery, and also by the loss of about a million persons in the Union and Confederate armies, whose deaths were occasioned by the war; and the calling from their homes, during four years of the war, of more than a million men must have had a great effect upon the increase of population.

But he says further, that "another cause may be alluded to namely, the notorious growth of habits of life in many sections of the country, which tend strongly to reduce the rate of national increase, and which, if persisted in, will make the showing of another census hardly so satisfactory as the present, even without a devastating war to account for the loss of hundreds of thousands in hospitals or on the battle-field.

"No one can be familiar with life in the Eastern and Middle States generally, and in the Western cities, and not be aware that children are not born to American parents as they were in the early days of the country. Luxury, fashion, and the vice of 'boarding' combine to limit the increase of families to a degree that in some sections has threatened the perpetuity of our native stock. This tendency is not one that needs be brought out by statistical comparison. It is patent, palpable, and needs no proof."

Of the many causes of disease acting during menstrual and married life, we will take the time to briefly discuss but one, namely, the effects of the gonorrhœal poison in the female. As long ago as 1872 Dr. Noeggerath, of New York, called the attention of the profession to the importance of this poison in producing a variety of pelvic inflammations, and in 1876, in a paper before the American Gynæcological Society, showed the effects of this virus in producing sterility in both the male and female. After these years of experience, many of the profession have learned to appreciate the importance of his observations, but I fear many still do not look for this for an exciting cause in the pelvic inflammations.

The symptoms of the disease have been so well and so fully described by Dr. Noeggerath that we need not now take the time to enumerate them—simply recollecting that an attack of gonorrhœa in the male may produce a slight stricture in some portion of the urethra, or may even affect the seminal vesicles and vasa deferentia, and in these positions remain latent for years, giving the individual no symptoms of its existence and making it difficult for the physician, even, to demonstrate its presence. But intercourse with a previously healthy wife implants the disease in her, and it lights up a series of inflammations which are always tedious and difficult to cure, and may become chronic, lasting through the whole of her menstrual life, and perhaps of her natural life, unless, fortunately, her life be shortened by this inflammation, aggravated by what would otherwise be slight causes.

Beginning as a slight or more severe attack of vaginitis and cervicitis, with likely a moderate attack of urethritis, it may readily be mistaken for the result of coitus in organs not accustomed to this function, or excessively used. But instead of subsiding from simple treatment, or none, as such a form of inflammation should, it extends along the mucous membrane of the whole genital canal, affecting the mucous membrane of the uterus, and even extending to the deeper structures, producing a true metritis; and after a time entering the Fallopian tubes and exciting a salpingitis. And from the peculiar anatomy of these organs—the abdominal end being larger than the uterine—the products of inflammation are readily thrown upon the ovary and into the peritoneal cavity, especially when the uterine extremity is abnormally contracted, as it usually is from the swelling of the tissues. Whence there results a perimetritis, which is usually of high grade in its acute stage, and and very tedious in the chronic. And in the chronic stage is very readily reëxcited into an acute condition by what would otherwise be slight causes—a cold, a fall, skilful manipulation with a sound or other instrument, operations not in themselves dangerous, like those upon the cervix or perineum. And resulting from these inflammations, the woman is very likely to be sterile, or if she becomes pregnant, to miscarry. And after she has been delivered, either at full term or prematurely, is in greater danger of puerperal fever from the chronic inflammation already existing in the pelvis. The gonorrhœal poison, then, in the female, produces a form of inflammation which readily passes into the chronic stage, and is with difficulty treated in either stage.

And how are these consequences to be avoided? Clearly, best by avoiding the original disease. And if these statements are substantially correct, and we believe they are, gonorrhœa is not the simple and temporary disease which it is often considered by both patient and physician—"a cold," "a slight acute disease" easily cured by simple treatment, and completely eradicated. But rather a disease which often continues during the greater part of the life, in the male, is readily transmitted to the wife, in her is, with even more difficulty, satisfactorily treated, and which frequently renders both husband and wife sterile.

As prevention is always the best cure, can there not be some way devised for preventing the spread of the venereal diseases? Should not competent physicians be employed to instruct the pupils in our public schools, of suitable age, the proper use and abuse of the reproductive organs, including the evils resulting from self-abuse, and the venereal diseases? Can we not, as physicians, aid in making vice as degrading and culpable in the *male* as in the *female?* And as gynecologists, hasten the time when our American women shall be the *healthiest*, and so the *happiest* and the *handsomest* of *any land*, as they are now the *brightest* and the *best?*

2400 Indiana Avenue.

ORIGINAL ARTICLES.

WHAT IS THE PROPER TREATMENT OF PENETRATING WOUNDS OF THE ABDOMEN?[1]

BY HENRY H. SMITH, M.D.,

OF PHILADELPHIA.

Among the marked changes of surgical doctrine, noted in the present century, none is more striking than the opinions held by many in regard to the development and results of peritonitis after injuries that involve this membrane. That inflammation of serous membranes presents rapid changes of circulation, sensibility and secretion, attended by marked constitutional disturbance, has long been admitted, and the apprehensions felt as to the result have been generally regarded as well founded. Yet such fears have not been universal: Marjolin, in 1832, having stated[1] that "he had often seen wounds of the peritoneum cured without any disturbing accident; whilst it was well known that paracentesis abdominis could be repeatedly performed, without creating peritonitis."

At the present time. doubts on this point are much on the increase; it being noted that the pleura can be perforated and serous effusions evacuated, without inflammatory symptoms, whilst Mr. Gay recommends "such incisions into the serous lining of joints, as will give free vent to pus or other products." Fraser also asserts[2] "that traumatic peritonitis, like traumatic pleuritis, is usually circumscribed and limited to the locality of the wound," not producing in every case general symptoms. Gunshot injuries of the peritoneum have also been noted occasionally as unattended by fatal results; thus during the wars of Napolen I, at the attack on Cairo, in the Egyptian campaign, Larry reported[3] a case of gunshot wound that evacuated two ends of a loop of intestine; in which case, in order to relieve strangulation, the wound was enlarged, the intestine returned, and the patient eventually recovered.

So little apprehension is now felt by many gynecologists in regard to free incisions of the peritoneum in cases of abdominal tumors, that they lay open the walls of the abdomen from the sternum or umbilicus to the pubis without much fear of the result. Lawson Tait being recently asked for an opinion on the nature of an obscure tumor of the abdomen, said[4] "Cut the patient open and find out," and it was done and the patient saved. "Surgeons," says he, "are beginning to understand that laparotomy is not such a dreadful operation after all." That it is a capital operation he admits—so are many others that no surgeon hesitates to perform, and "the idea," he says, "is rapidly becoming a thing of the past, that the peritoneum is a structure which must not be touched." In the same tone and on the same subject, Dr. Fowler, in an address as Chairman of the Surgical Committee of the Medical Society of Kings County, New York, speaking of the work done by Tait and Treves, says:[5] "But there is yet work to be done before men, and good men too, can be induced to come out of their shell of conservatism, so-called, and with a bold front help to break down the prejudices and misgivings based upon an ill-founded fear of the peritoneum and its behavior under the knife. A very marked demonstration of the tolerance of the peritoneum under the knife was recently shown by Mr. Barker in the London Clinical Society, where an intussusception of the ileum, with complete obstruction of the bowel and acute general peritonitis, was operated on successfully by laparotomy; the inflammatory products being mopped out of the peritoneal cavity with sponges moistened with carbolized water, and the wound dressed with salicylated cotton and iodoform; the acute symptoms being at once relieved by the operation. Mr. Bryant, in complimenting Mr. Barker on the success of his treatment, stated he "did not consider peritonitis a bar to the operation."[6]

With such views freely expressed, especially by gynecologists, are surgeons justified, in any case of gunshot wound penetrating the peritoneum, in opening the abdominal walls, checking hæmorrhage, removing foreign substances and giving free vent, by drainage-tubes or other means, to the pus, etc., found in connection with wounds? This important question can only be regarded as yet "*sub judice.*" In a recent report[7] of gunshot wound of the intestines successfully treated by laparotomy by Dr. Bull, of the New York Hospital (all the small intestines ex-

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] Dict. de Méd. Plaies de l'Abdomen. Paris, 1832.

[2] Fraser. Penetrating Wounds of the Chest. London, 1869.

[3] Dict. de Méd.

[4] Archives of Gynecology, No. 1, Feb., 1886, p. 16. New York, 1886.

[5] Archives of Gynecology, No. 1, Feb., 1886, p. 16.

[6] Editorial in Phila. Med. Times, April 17, 1886, p. 535.

[7] Medical News, Feb. 14, 1885, p. 171.

cept the duodenum being examined out on the abdomen, and numerous wounds sutured), the treatment being subsequently discussed, January 27, 1885, in the New York Surgical Society,[8] Dr. Bull stated as a proposition that "given an abdominal wound, with a patient in good condition, and without any symptoms which would enable the surgeon to determine whether or not the intestines have been perforated, he believed it proper first to explore the wound, and if it was found to enter the peritoneum, then to open the peritoneal cavity by operation and endeavor to remedy the damage done." In the course of the debate Dr. Weir, of New York, "believed it justifiable to make an exploratory incision and to examine with the finger," etc., but Dr. Sands said whilst "he should feel strongly inclined to follow the practice adopted by Dr. Bull, he yet thought it impossible, at present, to formulate our experience so that it would enable us to determine positively when to operate."[9]

As this recent debate and recent cases hereafter quoted show that there is such diversity of opinion on this subject as renders the surgeon's treatment open to the charge of malpractice; especially in those cases of gunshot wounds which result from violence and expose the attacking party to the grave charge of murder, it is very important that there should be some expression of professional sentiment that will free the surgeon from the charge in a court of justice, that the patient's death was the result of the treatment, and not positively caused by the wound as first created. I present this question, therefore, to this Section, as the highest authority on surgical doctrine in our country, and hope to elicit the judgment of those present whose attention and experience has enabled them to form an opinion.

In order to show that a *healthy* peritoneum as well as a diseased one, can sometimes be freely incised and lacerated without fatal results, I shall briefly allude to three well-known cases. In 1806 Dr. Samuel White, of Hudson, N. Y., removed a silver teaspoon on August 7, thirty days after it had been swallowed by an insane patient.[10] The spoon had passed from the stomach into the intestines, and was perceptible to the touch. By an incision three inches long, parallel with the epigastric artery and extending upwards to near the level of the crest of the ileum, he divided the abdominal muscles, opened the peritoneum with a lancet, caused the lower turn of the intestine, containing the spoon, to protrude, pierced the intestine over the end of the handle with the same lancet, and extracted the spoon with dissecting forceps. He then closed the opening in the intestine with the Glover's suture, dressed the external wound with adhesive strips and lint, and the wound healed by the first intention. There was no Listerism at that date. Renaud, of France,[11] likewise successfully removed a silver fork from a young man's stomach by gastrotomy. Houston reports[12] a case of a woman who fell from a hay-mow upon the handle of a pitchfork, which entered the vagina, passed up into the abdomen, perforated the diaphragm, and passed into the thorax till it struck the second rib. It was withdrawn; the patient lived many years subsequently, and an autopsy showed some of the abdominal viscera had protruded into the thorax. Brigham, of Utica, reported[13] an incision of the abdominal parietes made by an insane woman with a pair of scissors, with which she also cut off seventeen inches of her intestines, and subsequently recovered. Dugas, of Georgia, reported[14] a case in which the intestines were twice cut by a bowie-knife, closed by the Glover's suture and replaced, the abdominal wound sutured, and the patient recovered under a water dressing. Many similar wounds of the peritoneum and viscera are well known and need not now be cited.

The following cases may be mentioned: "Wound of the stomach" (St. Martin) by Joseph Lovell, Surgeon-General U. S. Army. *Am. Med. Recorder*, vol. xiii, p. 14, 1885. "Case of excision of part of the spleen" (the patient recovered after peritonitis) by W. B. Powell, M.D., Kentucky. *Am. Jour. of the Med. Sciences*, vol. i, p. 481, 1828. "Penetrating wound of the abdomen and section of the intestinal canal successfully treated on the plan of Ramsdohr," by Zena Pitcher, M. D., U. S. A. *Am. Jour. of the Med. Sciences.*, vol. x, p. 42, 1832. "Case of gastrotomy, successful," by J. E. Manlove, M.D., Tennessee. *Am. Jour. of the Med. Sciences*, vol. x, N. S., p. 532, 1845. "Perforation of the abdomen (four inches long) by a fence rail; intestine protruded covered with dirt; cleaned and replaced. Recovery." By Robert G. Jennings, M.D., Va. *Stethoscope*, vol. i, p. 490, 1851. "Puncture of the stomach with protrusion of this organ for six hours; nearly the entire stomach protruded. Wound closed by sutures; water dressing; cure." By Chas. Wm. Ashby, M.D., Va. *Stethoscope*, vol. 1, p. 660, 1851. "Wounded intestine treated by suture; recovery," by J. J. Chisholm, M.D., Charleston. *Charleston Med. Jour.*, vol. viii, p. 615, 1853. "Incised wound of left side, three inches long, between the eighth and ninth ribs, followed by protrusion of the stomach and its strangulation. Reduction and recovery." By W. W. Hart, M.D., Miss. *Western Jour. Med. and Surg.*, vol xi, p. 496, 1853. "Abdominal Wound," by Thos. P. Bailey, S. C. *Charleston Med. Jour.*, vol. ix, p. 604, 1854. "Wound of small intestine successfully treated by the interrupted suture," by J. C. McGee, La. *New Orleans Med. and Surg. Jour.*, vol. xi, p. 23, 1854. "Perforation of the stomach; recovery," by C. Haffield, M.D., Charleston. *Charleston Med. Jour.*, vol. x, p. 341, 1855. "Punctured wound of the abdomen; protrusion of intestines; their return obstructed by a band," by A. Fleming, M.D., Philadelphia. *Am. Jour. of the Med. Sciences*, vol. xxxiii, p. 321, 1857. "Incised penetrating wound of the abdomen with wound of and protrusion of intestines; recovery," by J. J. McElrath, M.D., Ark. *New Orleans Med. and Surg. Jour.*, vol. xv, p. 182, 1858.

[8] Idem, p. 184.
[9] Idem, p. 185.
[10] New York Medical Repository, vol. ∝, p. 367.
[11] Quarterly Jour. of Foreign Med., No. 18, p. 301.
[12] Boston Med. and Surg. Jour., vol. xxii, p. 71.
[13] This case is quoted from Agnew's Surgery, vol. i, p. 352, 1878, as taken from the Amer. Jour. of the Med. Sciences, vol. ix, N. S., p. 355, 1845, but I could not find it by his reference.
[14] Southern Med. and Surg. Jour., vol. viii, p. 407.

McGuire, of Richmond, at the meeting of this Section in 1881,[15] ably discussed the question of the treatment of gunshot wounds of the abdomen; reporting four cases of shot wounds of the peritoneum that did not wound the intestines, showing that a bullet *could* glide between the intestines without wounding them—an important fact in the prognosis and treatment of these cases, by demonstrating that such wounds, without visceral complications, are not impossible. Death, it is true, occurred in all these four cases; but in Dr. McGuire's opinion "it was the result of blood-poisoning, produced by absorption of the bloody serum poured out by the peritoneum after the wound." Might not a free incision and evacuation of this serum have been useful? In continuing his paper Dr. McGuire asks, as I now do: "Is it not time that we were trying some other course of treatment in cases of this character in place of the expectant or do nothing plan generally resorted to?" and he then proposes laparotomy and "a thorough inspection of the injured parts."

Dr. P. S. Conner, of Cincinnati, in his valuable article on this subject,[16] says: "The experience of the past twenty years has clearly demonstrated that the laying open the peritoneum is not as dangerous as had been previously thought; that this serous membrane is a great lymph sac that will absorb septic material most readily and rapidly, and that for a preventive of a fatal result from such absorption, drainage must be secured. When, then, the symptoms clearly indicate that extensive bleeding has occurred or is taking place, or that the stomach or intestines have been opened, it certainly seems to be proper and the surgeon's duty to perform laparotomy, turn out the clots, cleanse the cavity, and provide for the ready outflow of any fluid that may afterwards be poured out."

That this opinion of the liability of absorption by the peritoneum of the diseased products of injuries is sound, is proved by the anatomical study of the tissues, it being well known since the days of Bichat that serous membranes are only a modification of connective tissue, and that there is an identity of functions and affections between the two, as both are continually engaged in the great work of exhalation and absorption; the main difference being that the peritoneum is a more condensed membrane than connective tissue. The peritoneum has also a basement membrane and an epithelium, and is furnished with a great abundance of exhalant pores and absorbents which carry on their functions with great activity.[17] This has been proved by their readily receiving a mercurial injection, which diffuses itself over their whole surface and causes the membrane to appear as if formed entirely of such vessels. Mascagni, whose beautiful plates are well known, asserted that the power of absorption continued in this membrane many hours after death, and Leidy, several years since, established the existence of minute foramina of the peritoneal coat of the stomach; these orifices being, in Horner's opinion, probably formed by meshes of lymphatics; just as the gastro-intestinal follicles are formed by meshes of veins. Unquestionably some communication exists between the arterial system and the peritoneum, as proved by exhalation and morbid phenomena.[18] Bleuland, at Utrecht, and Vanderkolk in Holland, have made preparations which prove that the peritoneum contains blood-vessels. A drawing of the capillary vessels of the peritoneum covering the liver, minutely injected, is also furnished in Smith's anatomical atlas.[19] In the healthy state, the peritoneum is not sensitive, as may be proved by the impunity with which it may be irritated in living animals; though nerves were traced in it by Purkinje, and in the pleura by Bourgery. When serous membranes inflame "they become, as is well known, acutely sensitive, though they resist inflammation for a long time; but when inflammation extends to them, the portion of the peritoneum nearest the seat of disease manifests it by adhesions and disorganization, without the whole membrane becoming involved."[20] The establishment of peritonitis often becomes important in connection with the treatment of wounds of this membrane, and it should not be forgotten that percussion gives a clearer sound in the commencement of peritonitis than in health, and that this clearness day by day becomes more obscure, especially at the lower part of the abdomen, whilst auscultation reveals a friction sound (*bruit de frottement*) analogous to that of pleurisy or pericarditis.[21]

Knowing, then, the active absorbing surface that exists in the peritoneum covering the walls and contents of the abdomen, and the rapidity with which blood-poisoning follows absorption of diseased products, an additional reason is presented (only, it is true, on theoretical grounds), for the evacuation of such products, the cleansing of the tissue and the destruction of diseased germs by the judicious use of antiseptics, and again the question presents itself, how is this, in the case of wounds, to be best accomplished? This question is yet awaiting practical facts and the history of cases in which it has been performed, whether successfully or otherwise, and it is to be hoped that there are some present who can offer them. The extended information furnished by the war of the Rebellion is graphically described by the late Surgeon Otis,[22] of our Army, in the "Surgical History of the War," and I give it as his opinion "that laparotomy will henceforward be employed with increased frequency, not only in the treatment of morbid growths, but also in obstructions and wounds of the abdominal organs."

Admitting, then, that this operation may be correct in certain cases, it is important to remember that when it is performed, the incision should generally be in the line of the linea alba, and be free enough to explore the injured region; that a clear and decided statement should be made by the surgeon to

---

[15] Trans. Amer. Med. Assoc., vol. xxxii, p. 397 et supra, 1881.

[16] Published in Ashburton's International Cyclopædia of Surgery, vol. i, p. 195, 1882.

[17] Special Anat. and Histology, by Wm. E. Horner, vol. ii, p. 25, 1851.

[18] Op. cit., p. 27, et supra.

[19] Anatomical Atlas Illustrative of the Structure of the Human Body. By Henry H. Smith, Philadelphia, 1844, p. 115, fig. 339.

[20] Op. cit.

[21] Dictionnaire de Medicine, 1841, tome 23, p. 563, from Barth and Roget.

[22] Medical and Surgical History of the War of the Rebellion, part ii, vol. ii, by Geo. A. Otis, p. 206. Washington, 1876.

the patient or his friends of the very serious nature of the wound and the uncertainty of the result; presenting clearly the fact that the operation will possibly give an additional chance of recovery, the patient subsequently wearing an abdominal supporter to guard against hernia. Under anæsthetics; with the caution and technique pursued in laparotomy for the removal of tumors, and with the knowledge, as before stated, that in cases of a judicial character, the defendant's lawyer is sure—if possible—to charge death on the surgeon, rather than on the original wound, the treatment of wounds of the abdomen by laparotomy will doubtless be carefully weighed by the evidence in its favor, now slowly accumulating. To collect this evidence, and show the present sentiments of experienced surgeons on this mode of treatment, is the object of the discussion now opened.

DR. B. A. WATSON, of Jersey City, said that if it could be determined that the intestine was perforated laparotomy was demanded, as this procedure would limit fæcal extravasation and control hæmorrhage; that the difficulty was in making the diagnosis, and as this was not always possible, it should be remembered that the opening of the abdomen in gunshot wounds did not materially increase the danger. If the cavity was opened, perfect antiseptic precautions should be employed, and the cavity thoroughly cleansed. That it was not prudent always to wait until dangerous symptoms had developed before operating. The consent of the patient should be obtained, and the operation, if undertaken, should be thorough, and should include the removal of all albuminous fluids from the cavity and an accurate and exact examination made to determine fully the damage inflicted by the wound, and a perfect cleansing of the parts made.

DR. E. H. GREGORY, of St. Louis, said that the condition of the patient, rather than the character of the wound, should control the practice adopted; he waited until urgent symptoms had developed and plainly expressed a need for operative interference. Where the intestinal canal was undoubtedly opened, then the operation was always proper. He did not think that the presence of inflammation, the result of the injury, influenced unfavorably the result of operative interference, for able practitioners believed now that opening the cavity of the abdomen and thoroughly cleansing it with washes was good practice in acute peritonitis; he further stated that traumatic inflammation was limited and not diffused; that the wound from the injury and the wound from the operation would both produce local inflammatory process, and unless some other agent, possibly sepsis, intervened, the inflammation did not necessarily result fatally.

DR. J. B. HAMILTON, U. S. Marine Hospital Service, said that he believed dangerous symptoms did not always develop until death was imminent; that he would not wait for such signs, but where he believed the intestinal canal had been wounded he would proceed at once to an operation, without waiting for inflammation. He related a case which came under his observation, where a man suffered from a gunshot wound of the abdomen with perforation of the intestines, in which he waited for the development of urgent symptoms, and the patient died. Subsequently another case similar in character came under observation, and was subjected to immediate laparotomy, and in which eleven wounds were found in the small and two in the large intestines. This case recovered after the operation.

DR. H. O. MARCY, of Boston, thought that the hæmorrhage following a puncturing wound was often a concealed one, and that fæcal extravasation or hæmorrhage gave rise to septic infection and inflammation, and he considered the exploratory operation justifiable. Speaking of the sutures to be used in intestinal wounds, he said that fine chromatized catgut sutures were most applicable; that he had made excisions of the gut and united them by double lines of continuous sutures.

DR. D. W. YANDELL, of Louisville, remarked that some patients would get well under any plan of treatment; that he believed the operation should be done at once or not at all; that the size of the ball had but little to do with the demand for the operation, and further stated that, in his opinion, patients frequently died without the development of urgent inflammatory symptoms.

DR. R. A. KINLOCH, of South Carolina, stated that he believed he was the first man who opened the abdominal cavity and sutured the intestinal canal for gunshot wounds of the abdomen. He also claimed that he was the first to free the bowel from the adhesions at the site of the artificial anus and to reunite them. He thought fæcal extravasation was not a necessary consequence of penetrating bullet wounds, even where they traversed the intestinal canal, but that he could not believe, however, that traumatic inflammation was always limited, as it extended rapidly in the abdominal cavity, possibly as a result of septic inflammation.

DR. J. McF. GASTON, of Georgia, said that much depended upon the ability to arrive at a clear diagnosis of the extent and nature of abdominal wounds preliminary to laparotomy. In punctured or gunshot wounds of the abdomen the doubt as to existing lesions of the intestinal canal may, in most instances, be resolved by passing two tubes through the opening, which should be enlarged if requisite for this purpose; one of which is connected with a Davidson's syringe, and of sufficient length that it may reach the most dependent portion of the abdominal cavity, leaving only the terminal opening; while the other, of corresponding proportions or somewhat larger, should have openings upon the sides for two or three inches at the lower end. A saline solution containing one ounce of the chloride of sodium to the quart of water, at a temperature of 100° F., should be thrown in and allowed to pass out continuously through the escape tube, so as to carry off any accumulation of blood or any fæcal extravasation. If the outward flow should be arrested by clogging of the fenestrated tube, it must be removed and cleared of obstructions, either by clots of blood or fæcal matter, when it is to be replaced and the process continued until the water returns free from admixture with the

contents of the abdominal cavity. The tube that connects with the syringe should then be removed, and the remaining fenestrated tube attached to the other extremity of the syringe, when, upon working it, a suction through the tube will remove any surplus fluid from the cavity of the abdomen.

While this process ought to remove either blood or the extravasated contents of the alimentary canal, the absence of the latter admixture in the fluid discharged cannot be relied upon for a final decision as to penetration of the intestinal wall, as the opening may be so small that the hole will be closed up by the natural contractility of the muscular tissue of its coats. But apart from the aid in diagnosis, this measure is advisable as a curative agency in removing sanguineous effusion; and this saline solution is not found to prove detrimental, but, on the contrary, salutary to the peritoneum.

In regard to awaiting the development of symptoms, as recommended by one of the speakers, after a diagnosis of intestinal perforation, there are examples of favorable results; but with the light before us, an exploratory opening of the abdomen is warrantable in any case presenting indications of a penetrating wound of the coats of the intestine. The speaker referred to two cases[23] of abdominal section in his personal experience, which terminated fatally from the delay of one day and three days respectively, during which peritonitis had become developed and constitutional symptoms supervened from the extravasation of pus in one, and the sanguineous effusion in the other. Hence, it was thought best to operate at the earliest practicable period after such injuries.

ON ELECTROLYSIS;

With Special Reference to its Trial in Inflammatory Products in the Female Pelvis.

A Preliminary Report.[1]

BY JAMES HENDRIE LLOYD, A.M., M.D.,

INSTRUCTOR IN ELECTRO-THERAPEUTICS IN THE UNIVERSITY OF PENNSYLVANIA.

During the past Spring the writer began a series of exact clinical observations upon electrolysis in the human body. The object was to determine: (1) the utility of the process at all; (2) the diseases in which it was applicable and useful; (3) the best methods of applying it with precision; (4) the current strength—*i. e.*, the greatest potency with the least pain and damage. The observations were intended to be entirely clinical, because (1) it was considered that the theory of electrolysis was sufficiently established without further experimental proof, and (2) it did not appear, after some reflection, how experiments on other tissues, or the lower animals, would give us any facts which could not be as well observed in the diseased tissues of the human body. The first disappointment met with was the difficulty of obtaining a sufficient number and variety of clinical cases This was, no doubt, due largely to the summer vacation, when all medical work in this city suffers a great hiatus. This will explain the fact that this paper is preliminary to a report which the writer hopes to make in the future, and to have as complete as possible; and must constitute an apology for trespassing upon your time with much less material than it was his original intention to present. The cases presented below, if few in number, have at least been thoroughly observed. Dr. I. P. Willets gave much assistance in this work.

It may be well to remind you that electrolysis is the breaking up of a fluid, or substances held in solution, into its constituents, by the passage through it of an electric current. Thus, water is resolved into hydrogen and oxygen, as may be readily observed upon passing a mild current through a tumbler of this fluid. In compound fluids, or salts, the acids seek the positive while the alkaline bases go to the negative. The subsequent chemical actions of these acids and alkalies are just the same as would be the case if they were introduced from without, and constitute the secondary actions of electrolysis. These changes are in exact quantitative relation to the strength and duration of the current—that is to say, with so much current-strength continued a certain time (or, technically with so many *coulombs* of electricity), just so much hydrogen, oxygen, or whatever the simple atoms or compound radicle may be, will be liberated. In such a simple fluid as water the figures of this problem are exactly known, but in such a complex, organized series of tissues and fluids as exist in the human body (while doubtless the changes are just as constant and according to law), the figures are not known, and may never be. It is, of course, understood that the galvanic current is here referred to, as induction-currents are without practical electrolytic effects. In addition to these true electrolytic effects there are other effects, both physical and physiological, which are important to be understood. First of these in importance is the so-called "electrical osmosis," formerly called the cataphoric action of electricity. Dr. Amory, in his recent work on Electrolysis, lays great stress upon this action. When an electric current is passed through two fluids separated by a porous septum the fluid itself will pass in the same direction as the current, *i. e.*, from the positive to the negative. This is demonstrated outside of the human body. Dr. Amory speculates that this nutrition is affected, the parts being literally robbed of their pabulum by the osmosis, or flow of nutrient fluids toward the negative pole. But, theory aside, we have an array of clinical facts—fortunately accumulating—that there is a decided resolvent action in the electric current, both upon normal and abnormal tissue. This may, or may not, be strictly according to the known facts of electrolysis or osmosis. It is probably partly because of them, and partly because of other factors regulating the vascularity and nutrition of the parts, which are but little understood. The chief observers of exact facts have been Cinicelli, who studied aneurisms; Dixon Mann, who studied the quality and

[23] Reports of these cases will be found in the Southern Medical Record, Jan. 20, 1885, and in the Medical and Surgical Reporter, June 12, 1886.

[1] Read before the Philadelphia County Medical Society, October 27, 1886.

quantity of clots formed in blood by an electric current; Duncan, who has cured many cases of nævus by galvano-puncture; and Fox and Hardaway, who have removed supernumerary hairs by the current. In addition, we have Newman and Bruce Clark, who report, especially the latter, such candid and exact details of electrolysis in the cure of stricture, that we are scarcely permitted to doubt; Mundé, who empirically and without sufficient detail, reports success in inflammatory products in the female pelvis; Engelmann, who has removed a uterine fibroid with very strong currents; Kelsey, who has cured hæmorrhoids, and Reeve, who uses electricity as a reliable emmenagogue.

Conditions of Observations.—The series of cases upon which this paper is based was chosen because of the comparative ease of observation (most of the phenomena being readily accessible), and, also, because of the importance and general prevalence of inflammatory, vascular, neuralgic and functional lesions in these parts. These cases all had a history of cellulitis, followed, probably, by the state of relaxed circulation so well described by Emmet, and characterized still further by neuralgic pains in loins, abdomen, ovaries and limbs, while the menstrual epoch was usually deranged—dysmenorrhœa being especially prevalent, with leucorrhæal discharge in the interim. Touch revealed in all these cases more or less fibro-plastic deposit, causing pain on pressure and more or less fixation of the womb. The *disadvantages* of this series of cases were, chiefly, that the application of electricity had to be made through mucous membrane (which, undoubtedly, must diffuse some of the current to surrounding parts), that some of the most urgent symptoms were subjective (and, therefore, not always reliable guides), and, finally, that the vascular condition would vary from day to day or week to week, and tend to confuse the observation of the permanent effects, if any, upon the adventitious products.

The Method.—The patients were put in the dorsal position, and, first, the negative electrode was introduced into the vagina and well against the point of apparent greatest deposit. This negative electrode was at first cylindrical in form, about 1½ inches long and ½ of an inch in diameter, nickel-plated and fastened upon a flexible insulated stem about 8 inches long. The nickel-plated end was covered with absorbent cotton thoroughly soaked in warm water. Later, the cylindrical form was substituted by a small, olive-shaped electrode, also nickel-plated and covered with absorbent cotton; this was done in order to concentrate the current more effectually. The circuit was completed by applying a large flat sponge positive electrode to the abdomen. The position of this electrode was changed at times, according to circumstances; where there was much ovarian pain, it was put over the ovary; where there was lumbar pain, over the lumbar region, etc. The polarity was never changed. The cells used were the blue-stone cell, known as the Siemens-Holske modification of the Daniel. The number of cells was not usually noted in the reports, as the current strength was taken entirely by a galvanometer, which was kept in circuits as desired. This galvanometer was made by Flemming, and was guaranteed by him to be an accurate clinical instrument. It is vertical, graduated in milliampères, and patterned, in the main, after the Hirschmann instrument. The lowest strength used in these cases was 6 milliampères, the greatest strength was 24 milliampères. These extremes were used only occasionally—the greatest strength, in fact, but once, and then inadvertently and with the effect of cauterizing the mucous membrane. The average strength used was about 14 milliampères. The duration of treatment was almost invariably 10 minutes; in some exceptional instances the treatment was continued to 15 minutes. The vaginal electrode was occasionally shifted about or passed, firmly pressed upon the mucous membrane, from one side of the vagina to the other. The *immediate* effects of these applications upon the patients were almost *nil.* No complaints were made of pain, except by one patient in whom there existed almost a vaginismus, and who suffered from the introduction of the instrument rather than from the current. Even in the instance when the mucous membrane was destroyed by a too powerful current, no complaint was made of pain, and, in fact, the accident was not discovered until the following day.

These cases were kindly sent by Dr. Wm. L. Taylor, from the Gynæcological Dispensary of the University Hospital, and the treatment was conducted in the Nervous dispensary.

Case 1.—C. S., 46, married; three children, youngest 20 years. Complains of metrorrhagia. Treatment: February 23, 1884. Slight dilatation of cervix, and endometrium curetted, with removal of granulations. Ergot, etc.

August 20, 1885. Returns, complaining of "cramps in bowels." Some congestion of uterus, with slight tenderness on pressure.

April 20, 1886. Returns after attack of peritonitis (cause unknown); was sick for a couple of weeks. Touch: Cervix undergoing absorption; fundus anteflexed and fixed; tenderness and enlargement posteriorly and to left of body.

April 24. Treatment was begun in the manner related above, and continued with two applications per week. The greatest current strength attained was 18 milliampères, from thirty cells (which were not at their best at that time). There were twenty-two applications in all. After five applications, the patient reported that she was menstruating, the first catamenial show in eight months. After eight applications, the patient reported, and continued to report, her subjective symptoms much improved, *i. e.*, the neuralgic and bearing-down sensations. After the ninth application, Dr. Taylor made a careful examination, and found that actual absorption had taken place, and that the uterus was more movable. This absorption was confirmed by another careful examination, made after the twelfth application. The only-set back was caused by the patient doing some heavy domestic labor after the fifteenth application. Until the last application, however, there was some complaint of pain. Treatment was suspended by patient leaving the city.

Case 2.—A. S. 31, married; sterile; puberty at 17. Always had inward weakness, with dysmenorrhœa, since puberty. One year ago she had an attack of inflammation. Since then she has had bloody leucorrhœa, severe pain in each ovarian region, and in hypogastrium particularly; sense of great weight and bearing down. Touch: Uterus firmly fixed by inflammatory lymph; fundus anteflexed; mass extremely tender. Treatment began in same manner and frequency as in the preceding case. The external electrode—large sponge anode—was frequently applied over the lumbar region in this patient, because lumbar pains were among her most distressing symptoms. This patient has had, to this date, twenty-one applications, averaging about 14 milliampères, continued ten minutes. After four applications, Dr. Taylor reported her condition unchanged. After six applications, the patient said she was much relieved of pain in her back. After eight applications, she had a menstrual flow, which was more free and less painful at the commencement, but became as painful as ever toward the close. The usual cramp-like pains were not as bad as before treatment. After ten applications, Dr. Taylor made another examination, and reported slight improvement, *i. e.*, the parts were more pliant and less painful. After the twelfth application, she had a severe dysenteric attack, with much abdominal pain, which left the left ovary tender and sore. We note evidence of much thickening between cervix and left vaginal wall. The patient, of her own accord, absented herself for about one month at this time. When she came back, she reported that her disagreeable subjective symptoms, pain and bearing down, had returned during the suspension of treatment. After the fifteenth application, she had apparently suffered from an acute, circumscribed peritonitis (or cellulitis), which caused some increase of deposit. She still said, however, that she had less pain. At the sixteenth application, a much stronger current was passed than formerly. This was due to the fact that our cells had been overhauled and supplied with new zincs, thus increasing their electro-motive force, and to the omission to observe with due care the record of the galvanometer. We had, moreover, no rule by which to limit current strength, so that when we discovered the increase (24 milliampères), it was purposely continued for some minutes. The patient made no complaint of pain at the time, but presented herself next day with the remark that she thought "something was wrong." Examination then revealed a place, the size of a half-dollar, upon which the mucous membrane had been destroyed, leaving a sloughing, ulcerated wound. Treatment was suspended, and after a week the patient had entirely recovered without any untoward symptoms. This patient continues under treatment. There has not been as much improvement in her condition as in the former case, if we regard the absorption of lymph. There has been decided improvement in her symptoms of pain.

Case 3.—L. M., æt. 29, married; one child, 7 years. Four years ago had an attack of cellulitis lasting six weeks. Since then has had aching in back and limbs, pain in hypogastrium—worse at menstrual periods: menses regular in time and last one week; leucorrhœa; vertical pain. Touch: Cervix low down. Fundus anterior and fixed. Deposit of lymph posterior to uterus.

April 24. Treatment begun as in former cases. This patient had a total of seventeen applications. The current strength on some occasions was allowed to run up to 18 milliampères; the average used, however, was about 14. The number of cells required for this strength would vary from twenty-five to thirty; but these cells at this time were not in their greatest activity. After four applications Dr. Taylor reported actual condition unchanged. There was ovarian tenderness; on this account the anode was usually applied over the left ovary. The history of this case can be briefly summed up as one of continued improvement. Neuralgic pains, especially, yielded, even more than the deposits, but toward the last it was very evident to touch that the parts were softer and more pliant. The patient finally said that she "had not a pain or an ache," and discontinued treatment of her own accord. This case was not as bad from the start as any of the others here reported.

Case 4.—C. B., æt 28; married; eight years; puberty at 14; always had severe dysmenorrhœa. This has been increasing in severity. Four or five years ago had an attack of pelvic cellulitis. Since then she had had sharp pain in region of right ovary, pressure on bladder, and sensation of weight in pelvis. Touch: Cervix of uterus low down in hollow of sacrum; fundus acutely anteflexed. In each ovarian region there is great tenderness, with deposit of lymph; also posterior to uterus (which is firmly fixed) there is a deposit, larger to the left.

April 24, 1886. Treatment commenced as in other cases. There have been to date, twenty-eight applications. This patient has been much more sensitive than the others. She has a condition approaching to vaginismus, the whole vaginal tract appearing to be hypersensitive. In consequence, an average less current strength has been used than in the others; this average would be about 13 milliampères. After three applications, had a menstrual flow more painful than usual. Changes in this case were slow and mainly in the direction of less pain and sensitiveness. After thirteen applications she said that she always suffered some pain after each treatment, which pain lasted several hours, but was not severe enough to be a serious matter. There were, no doubt, some hysterical symptoms in this patient. Her menstrual periods continued very painful for a long time, and she insisted that she always had a febrile reaction with them. After thirteen applications, the evidence of cellulitic deposit still existed. After twenty-four applications, Dr. Taylor examined patient, and said that the deposits were much softened and almost gone. He considered patient much improved. This patient is still under treatment. She still has painful periods, but has much less vaginal and ovarian sensitiveness than formerly. This case was more obstinate and discouraging at first than any of the others, but can be claimed, at last, to have yielded to treatment. The evidence of absorption of deposits in this case seems to me to be beyond dispute.

Conclusions and Inferences.—The great objection, in my mind, to the theory of true electrolysis in these cases is the resistance of the mucous membrane and the diffusion of the current; in other words, the weakening and loss of current strength before it actually reaches the neoplasm. This objection does not hold when galvano-puncture is used, as in aneurism and the cure of moles and nævi; also in the removal of hairs, or in subcutaneous treatment of goitre, as the writer has himself practiced it. But in strictures of the male urethra, and in these cases of cellulitic deposit in the female pelvis, I do not see how galvano-puncture could be well practiced, certainly not safely in the great majority of cases. However, in the light of clinical results, we are justified in continuing a procedure even if it does not harmonize with some theoretical data. I have always insisted upon the necessity of measuring the current strength, if we design to place our observations on as scientific a basis as possible, and as far removed from the haphazard empiricism which is too characteristic of electro-therapeutics. Without a galvanometer serious damage might have been done in case 2. Without it, moreover, the operator is exposed to a number of other accidents, and, in fact, can never know what he is about. The patients' feelings in these cases were no gauge. I have known the current to be broken by the slipping out of the cord at the binding post, or interrupted by inadvertently turning it through a rheostat. But the most common cause of error is the varying resistance of the human body, and the difference, in this respect, of one patient from another. This is illustrated in the above cases, as follows: On the same day the current from a certain number of cells gave but 6 milliampères in C. B., but gave 14 in A. S. This great difference I was unable to explain, but quite able to overcome. Finally, I have often thought that there might be some analogy between the action of galvanism, under these circumstances, and counter-irritation. Any one who has felt the persistent soreness produced on the skin of the back of the hand by a strong current, with a tendency to desquamation, or even vesication, could readily believe in this resemblance. We have no very good explanation how counter-irritation acts, but still we use it successfully to promote absorption under a great variety of conditions. It seems possible that a strong current (and these currents were as strong as could be well borne) might produce counter-irritation upon the vaginal mucous membrany and promote absorption of inflammatory products within.

The procedure in intra-vaginal galvanism is no doubt, open to the objection of being tedious, and requiring frequent repetition, which is in a measure compensated by its being painless and less disagreeable to the patient than some other methods of treatment; while it seems to offer more relief to some of the symptoms than other plans. Among the special effects noted in these cases was the promotion of menstruation. The current-strength used did not tend to re-excite inflammation except in case 2, in which case, however, the evidence was not entirely conclusive.

HOW THE ILIAC ARTERIES ACT AS VALVES UPON THE VENOUS FLOW INTO THE INFERIOR VENA CAVA.[1]

BY CHARLES A. TODD, M.D.,
OF ST. LOUIS, MO.

It is a familiar dictum in anatomy that the veins in the great cavities of the body have no valves. In the cranial and thoracic cavities, this deficiency would not seem to be detrimental. The blood readily drains away from the head through numerous channels. In the thorax the venous trunks are comparatively short, and are, besides, directly subject to the suction action of the respiratory movements of the chest walls. In the abdomen, on the contrary, we have difficulties affecting the flow of blood through the great veins. By reason of the constant patency of the hepatic veins and their opening into the cava just as it pierces the diaphragm, their contents are immediately within the influence of the thoracic suction, and the freedom of the liver circulation is thereby insured; of course, the portal flow is thus facilitated. But between the diaphragm at the opening for the cava and the commencement of that vein on the fourth lumbar vertebra, there is a great column of blood formed mainly by converging streams coming from the pelvis and lower extremities, which must ascend against gravity and apparently under generally unfavorable conditions. Under such circumstances we should expect that congestions of the lower extremities would be extremely common, through the comparative inertia of the blood in the inferior cava and iliac veins. Upon close examination, however, of the anatomy of the region that naturally would be the site of greatest disturbance—the commencement of the inferior vena cava—we find an arrangement of the parts that suggests a solution of the problem.

It will be remembered that the ascending vena cava lies to the right of the abdominal aorta, while its parent trunks, the common iliac veins, both lie to the left of the right common iliac artery, and pass under it to reach the cava. The common iliac veins, therefore, at one point lie between the right common iliac artery and the bone; the vessels being bound together by the firm pelvic fascia. Now this arrangement, I believe, is by no means an indifferent one, a mere survival of anatomical conditions outgrown in the course of evolution, but one that accomplishes a most important end, viz., to supply the place of a valve in the great abdominal vein,—and just where such a support is most needed,—at the bottom of the column of blood and at the mouths of its primary branches, the common iliacs. The valve action is to be found in the arterial pulse: The artery being bound down by a strong fascia, in its pulsations must compress the vein, thereby more or less completely cutting off temporarily the venous current. In this manner the blood column above is supported, while the stream below is relieved, a more steady onward flow resulting.

I have made vivisections upon dogs to demonstrate

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

this valve action. After opening the abdomen and sufficiently displacing the parts with the hand to allow the finger to rest on the vessels, the iliac vein below the site of the arterial crossing could be felt to swell synchronously with the pulse. Other more elaborate experiments were not successful. A manometer, consisting of a hollow cylinder of thinnest rubber, one end being closed, the other slipped over a glass tube bent at a right angle, was passed up the femoral vein until the guide could be felt in the cava. This apparatus being fixed in position, was filled with water and the changes in its level noted.

The small calibre of the vessels, the influence of the respiratory movements, and probably other causes, deprived these experiments of any positive value for or against. In the human cadaver I have injected the femoral vein with water and clearly demonstrated the fact that the iliac veins were strapped down, so to speak, by the common iliac arteries just below their point of union with the cava. Elsewhere we find similar disposition of vessels. The lesser azygos passes under the thoracic aorta just before opening into the great azygos. I have seen it markedly dilated at this point.

The thoracic duct must be compressed during the pulsation of the aorta, as the two lie together in the osseo-fibrous foramen of the diaphragm. I have, indeed, read in some work on physiology, that fluctuations in the escape of fluid from that duct had been observed, that justified a belief in such behavior of the aorta.

MEDICAL PROGRESS.

UNIQUE CASE OF INJURY TO THE EAR.—DR. LOUIS J. LAUTENBACH reported the following interesting case at the meeting of the Philadelphia County Medical Society, on October 20, 1886.

J. H., aged 36, salesman, came to me February 18, last, on account of a ringing, a feeling of fulness and deafness of the right ear, which he said had come on the previous afternoon. Up to this time, according to his statement, his ears had been of equal hearing power, and he had noticed no defect nor suffered any inconvenience from either ear. On the afternoon of the 17th, while walking along the railroad, the New York express, going in an opposite direction, went past him, his right side being toward the train, when he suddenly experienced a sharp pain in the right ear, which was accompanied by deafness, a marked degree of ringing and fulness being experienced immediately. The pain soon disappeared, but the dulness, ringing and fulness were present when he presented himself to me.

When examined he had no pain, but yet there was slight tenderness occasioned by pressing on the tragus. The watch (of which the average hearing distance is 52 inches) was heard at 11 inches with the right ear and at 3½ inches with the left. The tuning fork aerially was heard equally in the two ears, but by bone conduction it was heard very much more loudly in the left ear. The anterior wall of the meatus was found to be quite red, and at about three-eights of an inch within the tragus a stiff, hair-like body was seen to be inserted; following the course of this body inward it was found to perforate the membrana tympani immediately below and very slightly posterior to the insertion of the manubrium of the malleus. The awn, or beard of wheat (for this is what subsequently the foreign body was found to be), was wedged between the inner wall of the tympanum and the wall of the meatus, being bent like a bow. The membrane was decidedly concave outward, it was tense, it was very much congested, particularly along the handle. The outer end of the wheat beard was detached from the wall of the meatus, and by the forceps was withdrawn from the tympanum, requiring an appreciable amount of force —much more than I had expected to exert. As it was withdrawn, a little pus exuded, and this was followed by a drop or two of serous fluid. The hearing of the ear was now reduced to five inches, but the feeling of fulness, of dulness of hearing, and the ringing, entirely ceased. The left ear being examined showed marked evidences of middle ear catarrh. The tuning fork, by aerial conduction, showed no change, but, by bone conduction, it was heard only slightly (instead of markedly, as before) better in the left ear.

The foreign body was a piece of the awn, or beard, of a wheat grain, and was 24 mm. in length; its thick, flat end had penetrated the membrane, and its teeth, or saw-like points, with which it abounds, were directed forward; this explains the force required for its removal, as well as the reason why it lodged so readily in the wall of the meatus. Admitting that there was occasioned by the foreign body an increased hearing distance, it is an interesting question: How was it produced? It may be that the pressure exerted inwardly was sufficient to bring the stapes into a more nearly normal position, thus improving the hearing; the pressure being removed, the hearing diminishing. It is, however, far more probable that the ears were of unequal value before the accident, but that the patient took no note of the difference.

CHLORIDE OF METHYL IN TRIGEMINAL NEURALGIAS.—No agent yet used for the relief of trigeminal neuralgias equals in promptness and efficiency chloride of methyl sprayed upon the parts. The writer has for many years suffered with occasional attacks of neuralgia of the trifacial, the attack being generally confined to the left infra-orbital though sometimes affecting the frontal nerves. Everything by turns has been tried, and though many remedies have afforded temporary relief none of them lasted long, until the method of spraying with fluids of an exceedingly low boiling point was suggested. Ether, and rhigoline were found prompt and efficient, cutting short an attack and giving long periods of rest. Recently methyl chloride was tried, the result being an instaneous suppression of pain, and thus far there has been no return. Methyl chloride is a haloid derivative of the paraffines obtained by distilling to-

gether sulphuric acid, common salt and methyl alcohol (wood spirit) Under ordinary circumstances it is a colorless gas which condenses under pressure into a fluid with an extremely low boiling point. The chemical, as used by the writer, was manufactured by himself, as it is not yet in the market. Indeed, the difficulties in the way of preparing and using it (the extremely low temperature at which the fluid returns to the gaseous state being the chief difficulty) will prevent the common use of the drug until some special means are devised for its preparation, preservation and application.—*St. Louis Med. and Surg. Jour.*, Nov., 1886.

THE PHYSIOLOGICAL ACTION OF MENTHOL.—DR. GOLDSCHEIDER, at a meeting on April 9, of the Physiological Society of Berlin, discussed the action of menthol on the sensory nerves. It was well known that it produced on the skin a sensation of cold, which was commonly ascribed to evaporation. On the other hand, the same sensation, when produced in the mouth by solutions containing menthol or peppermint, was explained by a supposed astringent effect. Dr. Goldscheider had come to the conclusion that neither of these explanations was correct. He made his experiments with a solution of menthol in lanolin, which he rubbed into circumscribed regions of the skin. After the rubbing, the thermometer showed, in all such places, an increase of temperature to the extent of 2° Cent., notwithstanding the marked sense of cold produced. The hypothesis of evaporation was excluded by the fact that the feeling of cold was no less marked when the part rubbed was covered with a watch-glass, and could, therefore, be produced only by direct stimulation of the nerves of sensation of cold. Again, if of two corresponding places on the forehead, where these nerves are most abundant, one were rubbed with the menthol ointment, and the other not, bodies which previously had caused no particular sensation would be felt as cold on the former spot, but not on the latter. Dr. Goldscheider, observing that while some regions, as the forehead, were especially sensitive to cold, others, as the elbow and the volar side of the wrist, were so to heat, found that the inunction of these with menthol produced a sensation of warmth, though less striking than that of cold in the former regions; and he called attention to the recent communication of Professor Herzen, on the precisely analogous results of pressure on the nerve trunks in these regions respectively. He therefore concluded that the sensations in some places of cold, and in other places of heat, produced by menthol, were purely subjective and consequent on the direct stimulation of the special nerves of temperature, those usually cognizant of cold being far more sensitive to its influence than were those adapted to receive impressions of higher temperatures.—*British Med. Jour.*, Aug. 21, 1886.

ELECTROLYSIS IN LUPUS VULGARIS.—GÄRTNER and LUSTGARTEN have treated ten cases of lupus by electrolysis with good results. They give an account of their method in the *Wiener med. Wochenschrift*, Nos. 27 and 28, 1886. Instead of employing the common method of puncturing the skin with steel needles attached to the negative pole of a galvanic battery, they use a flat electrode consisting of a silver plate slightly curved and set in a hard-rubber ring. The rubber ring is employed to prevent the edge of the plate from acting on the skin. The part to be operated on is washed with soap. A current of five to eight milliampères is allowed to flow through the part for ten minutes. The electrolytic action is confined to the diseased points, the cicatricial tissue or the sound skin between the lupus nodules being almost always unaffected. The lupus nodules, on the other hand, are excoriated and swollen, and give vent to a clear, watery, sticky fluid. After a few hours they sink in and become covered with a brown, leathery scab. The part should be dressed with iodoform and the scab allowed to fall, which it does in from eight to fourteen days. The result is a flexible pigmented cicatrix. The procedure is painless. The operation is indicated by the superficial location of the disease. It may be practiced both in the ulcerating and non-ulcerating forms.—*New York Medical Journal*, Nov. 6, 1886.

QUININE AND OIL OF TURPENTINE IN MALIGNANT PUSTULE.—DR. DON F. RIVAS describes in *La Union de las Ciencias Médicas* some cases of malignant pustule which were rapidly cured by the application of a paste composed of quinine and oil of turpentine. One of the cases was that of a shepherd, in whose flock the disease had manifested itself. He was stung by a mosquito on the forehead, and two hours afterwards the head and neck were extremely œdematous. The paste was applied and the pain and swelling shortly diminished. A couple of days later a large quantity of sanguinolent fluid was discharged, and by the fourth day the man was quite well. Another shepherd of the same flock, who was similarly affected, made use of some of his colleague's paste without consulting a doctor, and was also cured in four days. A third case was that of a woman who had a malignant pustule on the hand, which was unaffected by various remedies which were applied, but on the application of the quinine and turpentine paste the severe pain ceased almost immediately, and the œdema rapidly diminished, the patient being restored to health in four days.—*Lancet*, Oct. 16, 1886.

ICHTHYOL IN RHEUMATISM.—DR. BUBELIR has been using ichthyol in rheumatic cases, both of an acute and chronic type, with success. It is applied, after careful washing and drying of the affected part, either in the crude form or as a compound sulphate of ichthyol and soda or ammonia, and at the same time is given internally in the form of drops or pills, the dose being from 15 to 25 drops of the sulphate of ichthyol and ammonia, or a similar quantity made up into from six to twelve pills. In all cases the pain was relieved, but the swelling was not affected, and the author thinks the drug must only be used in the expectation of relieving pain. He says that where the external applications are for a long time, or without the precautions of washing, a pustular eruption may occur.—*Lancet*, Oct., 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, NOVEMBER 27, 1886.

LAPAROTOMY AS A DIAGNOSTIC RESOURCE.

At the meeting of the New York County Medical Association, on November 15, DR. T. GAILLARD THOMAS read his first paper before the Association, and, coming from such a source, with a subject of such marked significance at the present time, "Laparotomy as a Diagnostic Resource," it will naturally attract much attention. Empiricism, Dr. Thomas said at the outset, has steadily given away before logical deduction; the dogmas of the schools and the dicta of the masters have gone down before clinical research and experimental demonstration; and the theorist of the closet and the bookworm of the library have been replaced by the chemist, the anatomist, and the microscopist.

The modern development of the art of diagnosis has been accomplished by the subordination of theoretical methods of exploration and investigation to those which were purely physical; but throughout the whole domain of surgery there is no field in which diagnosis is more surrounded by difficulties than that of abdominal neoplasms. Formerly the diagnosis of abdominal tumors was allowed to rest upon deductions capable of being drawn from rational and physical methods, the latter of which were limited by the abdominal walls without and the pelvic roof within; but to-day surgeons devoting themselves to this department of our art are fully agreed as to the propriety of opening the abdominal walls for the purpose of exploring the viscera fully by touch, and to a limited extent by sight. After an experience yielded by seven or eight hundred cases, approximately, of laparotomy for various causes, extending over a period of twenty-three years, Dr. Thomas feels that he can say with truth that he has never once regretted opening the abdomen, and that he has in a dozen cases, at least, deeply regretted not having done so. He thinks it certain that in the future explorative abdominal incision will become the rule in all cases of the following conditions which do not yield to medical means, and concerning the etiology of which there is great doubt: 1, wounds and injuries of the abdominal viscera; 2, intestinal obstructions; 3, the presence of stones in the bladder or kidneys; 4, the accumulation of blood, pus, or serous fluid from any source; 5, the existence of a neoplasm in any part of the abdomen; 6, the occurrence of serious organic changes in certain of the viscera of the abdomen, such as the kidneys, the spleen, the uterus, the Fallopian tubes, or the ovaries; 7, ectopic gestation.

Even under the most favorable circumstances, the most skilful diagnostician is constantly likely to make errors without its aid; and hence it is that explorative incision is peculiarly valuable. In order to better convey his views and give his experience upon this subject, he mentions first some cases in which he had to regret non-interference, and then others in which more active measures produced happier results. The first case related was one of intestinal obstruction which occurred seventeen years ago, in which it was decided not to operate. The patient died, and at the autopsy a loop of intestine was found constricted by a string of false membrane, the result, probably, of some old peritonitis, which could at once have been removed by snipping with a pair of scissors. The second case was one of large uterine fibroid, which caused fatal exhaustion by its pressure on the abdominal viscera. The question of exploratory laparotomy was decided in the negative, and the patient died; but at the autopsy it was found that the tumor, which weighed forty pounds, was entirely unattached in the peritoneal cavity, and connected with the uterus by quite a slender pedicle; so that removal would have been easy. The third case was that of a lady who had a very large abdominal tumor, which was apparently solid. Consequently operative interference was declined; but when she died, about a year afterwards, it was found that the neoplasm was a multilocular ovarian tumor, entirely free from adhesions, with a small pedicle, and which could have been removed with every prospect of success. The reason for the obscurity of the diagnosis in this case was, that the tumor was composed of innumerable small cysts, the walls of which were thick, and the fluid within them colloid. Case fourth was another one of intestinal obstruction, in which it was decided not to operate, and at the autopsy it was found that

the transverse colon at its middle was distended with hardened fæcal matter held in an indissoluble mass by a quantity of hay. It is certain that upon abdominal section this would have been readily discovered, and it is probable that by a process of kneading it could have been dislodged and pressed on towards the rectum.

He mentions an obscure case which proved to be one of extra-uterine pregnancy, in which no operation was performed, and said in defense that almost all of this variety of his cases occurred fifteen or twenty years ago; which time carries us back into the ancient history of the subject. Few such cases occur to him now, for the reason that he is a strong advocate of explorative incision as a diagnostic resource. He mentions a few out of the very large number of cases in his later experience which illustrate the brilliant results which commonly attend upon this procedure. The first was one of supposed large uterine tumor with ascites, for which the patient had been repeatedly tapped, until she was in an exhausted condition. Laparotomy was performed, and he found that the fluid was not the result of ascites, but was ovarian fluid, which poured out from a ruptured ovarian cyst, which in its collapsed state occupied the pelvic cavity, giving rise to the belief that it was a fibroid. The operation for removal of the sac was simple, and the patient made a rapid recovery. The second was a case of hæmato-salpinx, in which the excessive distension of the Fallopian tubes gave rise to a sensation of solidity which made the diagnosis before operation very obscure. Both tubes and their corresponding ovaries were removed, and the patient was entirely cured. The third case was quoted as illustrating the fact that cases of abdominal tumor are sometimes utterly beyond the realm of diagnosis until the cavity is opened. For years this patient had a firm tumor behind the uterus, when suddenly she became almost collapsed and suffered greatly from pain in the tumor, which nearly doubled in size in a day or two. Laparotomy was performed, and a large blood-cyst was emptied from Douglas's cul-de-sac; after which he shelled out the skull of a six months fœtus. The patient died in ten days from cardiac thrombosis. The fourth case was one of intestinal obstruction caused, as was found on opening the abdomen, by a mass of malignant growth encircling a considerable portion of the large intestine. The patient died about a month after the operation.

There is one class of cases in which in his hands, Dr. Thomas says, explorative incision has yielded particularly brilliant results, viz.: cases of ascites in the female. In this connection he makes the special point that some cases of excessive ascites, which by repeated tappings prove fatal, are due to insignificant uterine or ovarian tumors, which are too small for recognition unless specially and carefully looked for, and the removal of which relieves the fluid accumulation which, by its exhausting influence, destroys life. These tumors are sometimes no larger than a small apple, and cannot be recognized except by the careful examination of an expert. In stout women, and often even in thin ones, they cannot be discerned at all after accumulation of ascitic fluid has taken place. Moreover, in some cases even where a tumor in the pelvis as large as a cocoanut coexists with ascites, no connection between the two pathological conditions, as cause and effect, is ordinarily traced by the medical attendant. Should this be the case, should the existence of the neoplasm be not detected, or should the malign influence not be appreciated even when its presence has been diagnosticated, the physician will probably endeavor to cause absorption by pressing into action the three emunctories, the skin, the kidneys and the bowels. This usually fails, and if it does not—the cause of the symptom remaining after the symptom itself has been removed—frequent resort must be had to the plan, which in time impairs nutrition and exhausts the vital energies. If, on the other hand, tapping or aspiration be employed, the beginning of the end soon shows itself, and it becomes merely a question of time how long the system of the patient will bear the exhausting drain to which it is exposed. Dr. Thomas has met with a number of cases in which he completely cured aggravated cases of ascites, after tapping had been repeatedly resorted to, and after all hope of recovery had been given up. He feels justified in assuming the position that in cases of ascites in the female, before the patient is relegated to the usual practice of repeated tapping, with its universally bad results as to cure, the most thorough investigation in regard to the possible existence of small neoplasms as important pathological factors should be made; and if signs of their existence be obtained, explorative incision should be made, as a forlorn hope that relief might be obtained.

In closing his valuable paper Dr. Thomas refers to two practical points. The first is the curious fact that in certain cases of abdominal incision, in which diagnosis alone is practicable, and others in which removal of the tubes and ovaries is impossible, great improvement sometimes results to the patient's general and local condition from the explorative effort alone. The second point is the necessity for certain

rules which should be observed in the performance of this simple surgical procedure: 1. Every explorative incision should be made under the strictest antiseptic precautions. As to strict cleanliness, all are agreed; if antiseptics of chemical character are valueless, they at least, in all probability, do no harm. While the question as to their utility is still *sub judice*, give the patient the benefit of the doubt, and employ them. 2. Always employ an anæsthetic. 3. Always make an incision which will admit the whole hand; one which will admit two fingers only is hardly warrantable. If possible, let but one man's hand be passed into the abdominal cavity. 4. Never hurry an explorative incision, but never prolong one unnecessarily. Let discussion as to diagnosis occur after the peritoneum is closed; not while it is open.

THE ABUSE OF MEDICAL CHARITIES.

Several months ago Mr. James Erskine, of Glasgow, read an interesting paper on this subject, it being more particularly concerned with the abuse of medical charities in his city. But this abuse is not confined to Glasgow, or to foreign cities: almost any dispensary physician in this country who keeps his eyes open in his consulting room and at the dispensary will soon see that there is a fearful abuse of medical charities by people who are not only able to pay for advice and treatment, but who would never think, in all probability, of asking charity in any other way. Even those dispensaries over the doors of which the sign reads, "The poor treated free" are abused by impostors; what then must be the case when the sign reads "Treatment free," without a word as to the poor?

It may perhaps be useless to inquire into the various motives of the people who ask such charity when they are unworthy of it. But one thing is certain: no class of men is so philanthropic and benevolent as medical men; and while they, as a rule, are at all times ready to give the benefit of their skill and experience to the deserving poor, it is time that they make the public understand that they cannot do more public charitable work for nothing than all the other professions put together, and that they cannot give this time and work to undeserving people. Not only should it be publicly stated that a dispensary is only for the poor, who are unable to pay for medical advice, but the circumstances of patients should be inquired into. This is done at the London Hospital and other London institutions; and Mr. Nixon, the Governor of the London Hospital, said about a year ago that this system of inquiry excluded about 50 per cent. of the applicants, especially in the special departments. At a recent meeting of the Manchester and Salford District Provident Society, Mr. John Watts said that they "started out with the knowledge that of the applicants for medical relief at the various hospitals and dispensaries of the city, there were 42½ per cent. who could, if provident dispensaries had existed, have paid provident dispensary fees, and therefore been independent of medical charity. After ten years of their work, that percentage, instead of 42½, was 13½. Thus, directly as dispensaries treat unworthy patients free they are robbing the medical profession of a certain portion of legitimate income. In the City of Chicago there is at least one dispensary, within a stone's throw of two or three physicians, which treats free all who apply. The public have an idea that dispensaries employ physicians of exceptional skill; and is it to be supposed that certain classes of this public will pay for what they can get next door for nothing? As thus carried on a dispensary is an outrage on the profession. Mr. Erskine's paper may be found in the *Glasgow Medical Journal* of November.

But neither Mr. Erskine's paper nor the foregoing remarks direct attention to some of the causes that have exerted great influence in developing the rapid increase of Free Dispensaries, Infirmaries and Clinics, and have multiplied their patrons fourfold during the last twenty years. We allude to causes that have originated in the profession itself, and which are still in full operation, more especially in all the larger cities. If our readers will revert to the social and professional history of the last thirty years, they will see that the growth of specialties in medicine and the multiplication of Free Dispensaries with overflowing patrons in all the centres of population have kept pace with each other so closely as to indicate something more than mere coincidence.

Prior to 1850 almost all educated members of the profession were general practitioners both of medicine and surgery; and it was regarded as the duty of every one to give faithful and kindly attention to such poor patients as might ask for their services, as is still inculated in our Code of Ethics. If cases occurred involving much expense or too protracted attendance, assistance was almost always rendered by the County Commissioners or Town Supervisors, and in the larger cities here and there a Dispensary was established chiefly for the purpose of furnishing medicines to those who brought prescriptions from physicians stating that they were not able to pay for the medicine needed. Such an institution as the

Dispensary of the present day, with, not only an apothecary to dispense medicine for the poor, but also the regular attendance of a full medical staff embracing one for every recognized specialty, ready to give *special* attention *freely* to the diseases of each organ or group of organs composing the human body, had no existence in our country, at that day. If the physician or surgeon in full practice found more poor patients coming than he could find time to attend to, he sent them to the nearest well qualified young doctor who was waiting for calls and glad to take them, both for the clinical experience he would get and the almost certainty of their proving stepping-stones to other cases that would pay. But the rapid development of *specialties* brought, *pari passu*, the disposition of medical students to educate themselves for *special* or limited fields of practice, and the equal education of the community to look for a special doctor for each region of the body. This soon necessitated the invention of some method by which the young specialist could get himself introduced to the public, and as the Code of Medical Ethics, whether written or unwritten, would not allow them to flood every man's door-steps with hand bills illustrated with the cut of an eye, ear, uterus, speculum or stethoscope, the next thing available was to utilize the public sympathy for the sick-poor in establishing Dispensaries, Infirmaries, Asylums, Special Hospitals, Clinics and Policlinics, for each of which there must be the names of a few prominent business men or women to serve as trustees, managers, or its patrons, and a medical specialist for each class of diseases the institution is intended to accommodate. By this process the young doctor sesures a public position which at once brings him in contact with some prominent members of the community, and in plain English, advertises him as a specialist and a liberal friend to the poor. Meantime he has his regular office fitted up in good style for the reception of ordinary patients, and both for the purpose of securing sufficient revenue and duly impressing his customers with the importance of *special* qualifications, he must charge not less than *five dollars* for the most ordinary examination.

Now, with the same *specialist*, or even non-specialist, making a minimum charge for patients at his own office, equal to what most working women can earn by not less than two weeks' hard labor, and at another part of the same day bestowing the same services at the Dispensary for nothing, how long does it take the laboring classes of both sexes to learn the avenues open to them, and to arrive at the conclusion that they are not able to pay the amount of one or two weeks' wages for the same professional services that they can get at the Dispensary for nothing. It is exactly this kind of machinery, invented and fostered by the profession itself, that has, during the last three decades, filled all our cities with so-called medical charitable institutions, converted tens of thousands of the working classes from moderately paying patients into full medical mendicants, and robbed the younger class of medical and surgical practitioners of the patronage of the very class of honest working people, that formerly constituted the chief avenue through which they gained in a few years reputation and full practice. If the members of the medical profession have thus fostered a system of extravagant specialism and equally redundant medical charities, by which they find their own pockets empty, the principal blame is upon themselves, and it will require something more than the closer questioning of the applicants at the door of the Dispensary concerning their pecuniary circumstances to correct the evil.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Nov. 1, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. ALBERT E. HOADLEY read a report of

FIVE CASES ILLUSTRATING A TREATMENT OF THE MORE SEVERE FORMS OF STRICTURE OF THE RECTUM.

Case 1.—J. H. G., an engineer, æt 40, with history of piles of eight years standing and stricture two years. Examination revealed a hard carcinoma of the rectum within one and a half inches of the anus, immovable on account of adhesions to the sacrum. The adjacent parts were involved and the bowel completely occluded. The general condition of the patient was bad. Abdomen swollen and very tender. Had not had a passage from the bowels for two weeks. Could not take food without immediately vomiting. Pulse feeble, 120, temperature 102°. At the first examination Dr. Hoadley succeeded in separating the adhesions sufficiently to pass a syringe pipe beyond the immediate stricture. A half-pint of soap water was injected a number of times during the afternoon and evening with the effect of bringing away considerable matter and gas and giving great relief to the patient. Three operations were performed at intervals by which a fair canal through the cancerous mass was made, but without relief to pain. At the fourth operation the lower end of the growth and sphincter ani were divided with one stroke of the knife. There was little hæmorrhage. The relief obtained by the division of the sphincter was tenfold greater than that from all the other operations.

Case 2.—A laborer, forty-two years old, with history of hæmorrhoids, and stricture of five years standing. Examination revealed a firm unusual stricture within two inches of the anus. Syphilis could not be excluded as he was put on large and increasing doses of pot. iod., and a systematic dilatation with an elastic bougie commenced. After four weeks a bougie one inch in diameter could be passed without difficulty. There was no particular irritation at the seat of the stricture, but the bowels were very irritable and there was an increasing diarrhœa. The stricture and sphincters were thoroughly divided and the wound packed with gauze on which dry per-sulphate of iron had been sprinkled. Relief was immediate and complete. Examination two months after the operation showed the wound to be nearly healed and the patient feels better than he has felt for a year previous.

Case 3.—An American woman, aged thirty-nine, the mother of three children; she had a stricture of nine years standing. When the stricture was divided it was found that the rectum contained a carcinomatous mass, almost occluding the canal, higher than could be reached with the fingers. The sphincters were divided back to the coccyx and an incision was made through the mass nearly to the sacrum, and a piece of gauze pressed on the wound to prevent bleeding. A large-sized drainage tube was placed in the bowel above the disease. The rectum was packed and all secured with a T bandage and the patient put to bed. After the fifth day day she rapidly improved and left the hospital within a week after the operation. Three months afterward she was comfortable and had gained six pounds.

Case 4.—A German woman of fifty six years, the mother of several children. She had enjoyed good health until the development of the stricture of the rectum about three years before. The stricture and sphincters were divided, and on introducing the finger the bowel was found blocked up with other strictures of a malignant character. These were dilated with the fingers. A violent inflammation supervened and the patient's life was threatened. She made a slow recovery and was convinced that she was made worse by the operation. Dr. Hoadley thought that if the strictures had been incised instead of divulsed, the patient would have derived benefit.

Case 5.—An American of sixty-seven years, the mother of four children. Labor had always been normal and easy. She had a stricture of five years standing. Examination revealed two or three open sinuses and fluctuating abscesses in the ischio-rectal region. The abscesses and sinuses were opened and packed with iodoform gauze and the stricture divided, the sphincter being simply dilated. Great relief followed the operation which was made to relieve pain and not with the hope of prolonging life. From a study of these cases, Dr. Hoadley deduced the following principles:

First, it is dangerous to practice divulsion of malignant stricture of the rectum; second, division of a severe stricture of the rectum without dividing the sphincters is of little practical value and has no tendency to cure; third, division of malignant strictures with the sphincter gives great relief and tends to prolong life; fourth, division of severe non-malignant stricture with the sphincters gives great relief and tends to perfect cure; fifth, division of both stricture and sphincter whether malignant or non-malignant is not attended with danger. Therefore we may conclude, that in all severe strictures of the rectum, whether malignant or non-malignant, complete division of the stricture and all the tissues below it back to the tip of the coccyx affords the greatest relief and of the non-malignant strictures, the best means of permanent cure at our command.

Dr. J. Frank thought that if the author had divided his paper into relief for malignant strictures, and treatment for non-malignant strictures, it would have been a better classification. He had not had much experience with malignant strictures, but had divided one in the manner described by the author, by cutting down through the cellular tissue. He thought there was little danger in performing the operation, and was surprised at the small amount of hæmorrhage. But the benefit from the operation lasted only for a short time, there was relief at first but in six or eight weeks the same symptoms returned. Even in extirpated cancerous growths, as far as his information went, they generally return within a year. He had had one case in which the whole cancerous growth was extirpated, but in six or eight months it commenced to return and in a year's time the patient died with cancer. He thought that in dividing the strictures care must be taken not to go too far up the bowel, or too deep, as the peritoneum might be cut into.

Dr. A. E. Hoadley in closing the discussion said: Dr. Frank suggests that we be careful in dividing the strictures high up; I think if we do not divide them higher than we can reach with the finger, dividing them in the posterior line, there is little danger of opening the peritoneal cavity. The peritoneum does not come down as a rule, where it can be reached with the finger. In regard to hæmorrhage, those cases sometimes bleed profusely even though they are divided right in the median line, where we least expect to find blood vessels; the tissues become vascular, new vessels form, and it is necessary to tampon the wound and in doing so it is best to put in a tube to relieve the bowels of gas. The suggestion made in reference to the division of the paper is quite proper; perhaps it would have been better to have said, report of cases illustrating a treatment. The treatment is palliative in malignant strictures, and in non-malignant strictures sometimes effects a cure. In answer to the question how many inches up may we go; it is a rather difficult matter to reach the peritoneum of the posterior wall of the rectum with the finger, even if the sphincter is divided; you can reach about four inches with the finger by pushing hard, and I think I would hate to divide a stricture further than I could reach with my fingers. Even the inferior mesenteric artery (superior hæmorrhoidal) comes down sometimes, before it bifurcates into the lateral branches, within reach of the fingers and may be

divided, but that is no drawback to the operation because you can put a tampon into the rectum so firm that all hæmorrhage can be perfectly controlled and on the next day you may remove about half of the tampon to relieve tension, and the remaining half will tumble out itself three or four days later. It has been my experience, and it is on the authority of the textbooks, that the vessels there can be controlled with the tampon very securely and with perfect safety. It is best to prepare for it and always tampon where you make that division, because moderate hæmorrhage is sometimes quite persistent.

DR. A. J. OCHSNER read a

REPORT OF A CASE OF ACTINOMYCOSIS,

with exhibition of patient. The patient, a stock raiser, aged fifty-six, entered the Presbyterian Hospital of Chicago, October 13, 1886. Until the autumn of 1877 the patient was in perfect health, following his occupation of stock raising. At that time he was exposed to drafts of cold air during a journey, and experienced severe neuralgic pains in the left antrum of Highmore. He had seven teeth taken from his upper jaw from which all the other teeth had previously been removed, but these proved to be sound and he obtained no relief by their removal. For six months he suffered excruciating pain in the left antrum and in both eyes from sunrise until sunset. In 1878 there was a spontaneous opening of the abscess into the pharynx evacuating a considerable amount of pus and some blood and giving the patient marked relief. A portion of the discharge usually entered the larynx at night, giving rise to severe cough. In May of that year the patient underwent a surgical operation, an opening being made into the antrum above the first molar and the cavity curetted and irrigated. The irrigation was continued two or three times daily for two years, during which time he suffered severely from pain and weakness. In the spring of 1882 the patient went to northern Mexico and spent the summer on the plains and among the mountains between that point and Colorado, His general health and strength were much improved. In July, 1885, the patient began to cough and continued to do so until his admission into the Presbyterian Hospital. During September, 1885 and 1886 he expectorated blood, but thinks it came from the posterior nares. Since the first of October, 1886, he has expectorated mucus and pus streaked with blood which undoubtedly comes from the lungs or bronchi. The patient has lost thirty-seven pounds in weight during the past two years; his position is stooping, chest full in front and a decrease of motion on the left side with dulness, roughened respiratory sounds and numerous mucous râles. Below the upper border of the fifth rib and throughout the right side the sounds are normal. The history of the patient led to a suspicion of actinomycosis of the left lung, which had primarily existed in the antrum. By a microscopic examination of the sputum the characteristic fungus was at once found confirming the diagnosis beyond a doubt. Dr. Ochsner considered the following facts of practical interest in connection with the case:

The patient has been engaged for more than forty years in raising, buying and selling large numbers of cattle. Many of these animals suffered from lumpy jaw, and it was his practice to cure them by freely opening the abscess, by crucial incision, extirpating as much as possible of the lump and introducing about one drachm of powdered arsenic into the cavity. Repeating this once or twice, usually effected a permanent cure.

DR. R. H. BABCOCK said: The case is one of exceeding interest from its rarity, and particularly as it is a case occurring in this country and one of very few that have been recorded, and in this case the diagnosis is so unquestionable that the interest is all the greater. We know that in cattle the disease is manifested by tumefaction in various organs, whereas in human beings it is by suppuration and metastatic abscesses. The disease in the human being may effect any of the organs, not merely the lungs, but particularly the viscera of the abdomen. I would like to ask Dr. Ochsner if there are signs of the disease having attacked other parts of the body than those mentioned, any symptoms which lead him to infer that the digestive organs or the stomach are infected.

DR. R. TILLEY said: This is certainly one of the most interesting questions that has been brought before the society for a considerable time. In the case presented to-night the disease seems to have originated in the antrum, and is therefore especially interesting to those engaged in treating affections of the nose and throat, and the teeth, as in the history of this case, there was a considerable amount of pain associated with the eyes, it is of interest to the opthalmologist, and as it is now associated with the lungs, it is of interest to those engaged in the study of affections of the lungs. As this case together with the last case presented to the society, in all probability constitute the only indisputable cases that have appeared in English literature, I think it would be of sufficient interest to the society to ask Dr. Ochsner to carry the investigation still further and try and produce the disease by inoculation on one of the lower animals. I will move at the proper time that the Society place at Dr. Ochsner's disposal the necessary funds. I would suggest that Dr. Ochsner accompany his report with a diagram of the fungus as it appears under the microscope. I have looked at the various schematic sketches that are published, and I claim that it would be absolutely impossible for any one with only the information afforded in these articles, without further study, to diagnosticate the fungi as they appear in the specimens presented. In Dr. Belfield's book I think the diagram is more in correspondence with those we see to-night, but those that are in Councilman's article in Wood's Reference Handbook certainly do not present such an appearance.

DR. J. R. SKEER inquired the condition of the lung at the present time, whether cavernous or indurated.

DR. FRANK BILLINGS endorsed the remarks of Dr. Tilley, and thought the society should afford Dr. Ochsner means to carry on the investigation. It is

not quite settled how this fungus is carried from one tissue to another; in one case it has been proven that it was carried to the heart by ulceration into one of the jugular veins, and it is known that it will spread through contiguous tissue as through the diaphragm from the pleural cavity to the peritoneal cavity. A pure cultivation of the fungus has been made at Berlin.

Dr. Harold Moyer said: There is great uncertainty as to the manner in which the fungus obtains access to the tissues. I would ask Dr. Ochsner if there is anything in history of this case that would clear up that point. Two very interesting cases have been recently reported, in one case lung actinomycosis was diagnosticated during life, and after death of the patient a large actinomycotic mass was found in the lower portion of the upper lobe of the left lung, and in the center of the mass a piece of tooth was found. Israel (Centr. Bl. f. d. Med. Wesseusch) demonstrated actinomycocis in the sputum of that case, and so far as I know it is the only case on record in which a diagnosis was made from the sputum. The other case bears on the manner in which the fungus obtains access to the tissues and is reported by Soltmann (Jahrb. f. Kinderhkde). A child while at play swallowed a head of what is known as fox grass, which was followed by severe pain, difficulty in swallowing, and difficulty in respiration. In a few weeks the head of grass was discharged in an abscess at the left of the vertebral column. In less than six months this case developed actinomycosis. The theory of Israel regarding the first case is that the parasite was carried by the piece of tooth directly into the lung. In the second case the fox grass undoubtedly carried it directly into the mediastinum, which was followed by secondary involvement of the tissue of the lung.

Dr. W. T. Belfield said: I would like to say in reference to Dr. Tilley's proposition, that experiments on the cultivation or transmission of this fungus ought to be made from fungi obtained from animals and not from man; if from the latter, from pus taken from abscess cavities around the jaws. The reason is that fungi obtained in the sputum are far more delicate in appearance and for preservation. I have found that after a few days they disappear or at least are extremely hard to find, and it is stated by those who have had a great deal of experience that the fungi obtained from the sputum are not so robust as those obtained from cattle or from pus cavities, aside from the air passages, in man. In justice to Dr. Schirmer, I would say that in the case reported by him, the fungus was recognized in the sputum and a diagnosis of lung actinomycosis was made.

Dr. R. Tilley said: The question with me was not that of producing the best possible sample of the fungus, but to place cases in question beyond dispute and give the society further opportunities of studying the question. Necessarily American physicians must be ignorant of the question as a whole because it is impossible to get that accurate information from literature that we can get from the study of the manifestations of the disease. I would not discriminate between this case and that of Dr. Schirmer, on the contrary, if there is a probability of developing the fungus from pus, and an animal is chosen, I do not think there would be any objection to taking samples from both cases to inoculate the same animal.

Dr. A. J. Ochsner, in closing the discussion, said: As far as we know at present there is no evidence of the existence of actinomycosis in any other portion of the body; the probable reason of this is the fact that the patient has been exceedingly careful never to swallow any of the discharge from the abscess or any of the sputum. The accumulation of the fungus in the lungs is probably not sufficient for ulceration to have taken place into any of the other organs. The amount of sputum during twenty-four hours is between one and two ounces, and some days there will be one or two of these accumulations of actinomyces of considerable size and a few very small points, and on some days it is impossible to demonstrate actinomycosis. On Saturday there were, I think, a dozen quite large accumulations and quite a number of small ones, so that judging from the number we find in the sputum, and from the physical signs, which are a decrease in the motion of the left side, mucous râles, and very slight dulness on the left side above the fifth rib, the accumulations are not very great, and we do not find any signs of the existence of actinomyces in any other organ, which answers also Dr. Skeer's question concerning the condition of the lungs at present. Concerning the access to the tissue the patient had teeth removed from the left side of the upper jaw a number of times, during which time he was constantly handling animals suffering from lumpy jaw, which is the same as actinomycosis in man, and constantly handling objects that came in contact with these animals. Another point of interest which might give us some light as to the possible introduction of actinomycosis in man is this: The patient tells me that on the farm whenever one animal has lumpy jaw, a number of animals are very likely to have it soon after. This happens generally in the spring of the year, or late in winter, when animals are likely to rub their necks on the fences. He thinks these animals with lumpy jaw rubbing their necks on the fences are likely to leave some of the actinomyces and the healthy animals are likely to scratch their skin and break the hide, and in that way become infected. The plants are exceedingly small and could with great ease be introduced into the mouth and the cavities of the teeth, or into the jaw from which teeth had been extracted. Drs. Ross and Robison are treating the patient at present by means of the pneumatic cabinet, introducing into the lungs 1-1000 solution of bi-chloride of mercury. It seems that more of the actinomyces have been coughed up since this treatment began, but it has been of such short duration that nothing certain can yet be said.

The Committe on Pathology reported through Dr. W. T. Belfield the examination of the case of actinomycosis hominis presented to the society on September 6th. The patient is a man about twenty-five years old, emaciated and feeble. The lateral diameter of the neck is considerably increased by inflammatory thickening of the superficial cervical tissues which

are hard and unyielding; on either side of the neck is a ragged scar and small fistulous opening from which issues a slight serous discharge. The jaws could be separated to only a slight extent; but so far as could be determined, the mouth and throat presented nothing abnormal; no carious teeth were detected.

Dulness on percussion and broncho-vesicular breathing were found over the apex of either lung; on the left side in the supra clavicular region and first intercostal space anteriorly; on the right side down to the third rib.

The patient coughs frequently and occasionally raises considerably sputum. About an ounce of sputum was collected from which slides were prepared and several specimens of actinomycetes were detected.

September 28 an incision was made in the left side of the neck, giving exit to a small quantity of pus, containing actinomycetes. It was the opinion of Dr. Belfield that this patient is the subject of actinomycosis.

DR. BELFIELD said that he had been informally requested by the President to examine the case presented by Dr. Ochsner, and had found the patient exactly as described. He thought there was no question about the genuineness of the specimens exhibited. The diagnosis rested altogether on the detection of the fungi in the sputum, because if that were absent the physical signs might be due to some other cause, but he thought the physical signs in this case were caused by the fungi in the lungs.

On motion of Dr. Tilley, fifty dollars was voted to Dr. Ochsner and two members of the society for the purpose of making a series of experiments with actinomycis.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Relation of Tuberculosis and Scrofula—Iodol; in Abscesses; in Eye Diseases; Internally—Collyrium for Strabismus.

The question of the identity or non-identity of tuberculosis and scrofula has long been a mooted point in the profession, some pathologists considering them as two distinct morbid conditions, while others confound them in one and the same affection. Dr. Arloing, a well-known experimental biologist, in a communication lately made by him to the Academy of Sciences, somewhat elucidated the subject, but it still remains open as to whether the two affections in question have the same origin or not. In a note addressed to the Academy about two years ago, Dr. Arloing endeavored to show by experimental researches that he had prosecuted with guinea-pigs and rabbits, that while these animals were susceptible of being infected with pulmonary tuberculosis, true glandular scrofula did not cause any visceral lesions in the latter. He did not, however, feel justified in concluding from this fact that the two morbid processes were specifically distinct, but, at the same time, while admitting the hypothesis of a common origin, for the present, for these two affections, its activity was considerably attenuated in scrofula. With this idea, it was interesting to find out whether it was possible to augment the virulence of scrofulosis to such an extent as to enable it to effect the rabbit and guinea-pig indistinctly. The organism of the guinea pig is a soil extremely favorable to tuberculosis and scrofula. The latter invades its economy with such facility, and assumes such malignity, that the author was induced to inquire whether, by inoculating it through several generations, in the guinea-pig, he might be able to increase its activity enough to overcome the resistance offered to its inaction in the organism of the rabbit.

The experiments prosecuted in this direction by Dr. Arloing showed that the passage of scrofulosis in the guinea-pig, during two successive generations, does not augment the virulence for the rabbit, nor does it modify sensibly that which it possessed for the guinea-pig. The result would be different with true tuberculosis under its attenuated forms. Among the osseous and the articular affections of human beings known as local or surgical tuberculoses, some are beyond the resources of art, while others are considerably improved, if not cured, by the intervention of the surgeon. The latter are, according to the author, always manifestations of scrofulosis, the former are those of tuberculoses, but of a milder virulence than tuberculosis of the lungs or of serous membranes. If rabbits and guinea-pigs be simultaneously inoculated with material drawn from lesions of this nature, it may happen that the guinea-pigs present the classical alterations of generalized tuberculosis, whereas the rabbits escape with a little localized suppuration. But if the tubercles developed in the guinea-pigs be inoculated in other rabbits, the latter almost invariably contract pulmonary tuberculosis. Sometimes it is necessary to have two successive cultures to attain this result. This fact, concludes Dr. Arloing, deserves to be taken into serious consideration, as at present there is such a tendency to confound tuberculosis and scrofula in one single affection. It justifies once more the difference that the author had experimentally established between these two morbid conditions. If it is not yet proven that they are the work of distinct viruses, if it must be admitted that they are derived from one single agent, the tubercular bacillus at different degrees of activity, it must be accorded that, in true glandular scrofulosis, it is further from its primary virulence than in local tuberculoses.

Iodol may be applied in different forms, in powder, in solution, or with gauze soaked in the latter. The solution preferred till now is prepared by dissolving one part of iodol in sixteen parts of alcohol and adding to this thirty-four parts of glycerine. According to Dr. Ferrand, of Montpellier, this preparation is found useful in all cases of deep abscesses, fistulæ, or wounds of cavities. In the treatment of affections of the eye, the author recommends preferably the use of the powder of iodol mixed with some

inert powder, as in the following formula: Iodol, 1 gramme, powdered sugar, 5 grammes. This composition, says Dr. Ferrand, has the advantage of never producing any irritation in the eye. He has also employed, with good effect, an ointment composed of: Iodol, 1 gramme; vaseline, 20 grammes. As regards the internal use of iodol, the author thinks that it has been very much neglected, and unjustly so, but speaking from his own experience he could safely recommend it as a valuable therapeutic agent. For the dressing of wounds it is equal to iodoform. It possesses, like the latter, remarkable healing properties, and is its equal as an antiseptic, but it has the advantage over iodoform in being less toxic and being deprived of its characteristic odor, which so often disgusts patients, and sometimes even the surgeon.

Dr. Boucheron recommends the following collyrium for strabismus: Sulphate of atropine, 5 centigrammes, distilled water, 15 grammes; 3 drops to be instilled into the eye, at the commencement of convergent strabismus, and while it is still intermittent. Improvement takes place in a few weeks. Later on, for reading, convex glasses should be worn to remedy the hypermetropia, which is the primary cause of the strabismus. As soon as the convergent strabismus becomes constant, there is nothing else to be done but to practice strabotomy. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York State Medical Association — Gunshot Wounds of the Intestines.

The third annual meeting of the State Association, which was held November 16, 17 and 18, was, like its predecessors, successful and attractive in every way. It convened at Lyric Hall, on Sixth Avenue, instead of at the Murray Hill Hotel, as heretofore; though the pleasant *conversazione* and supper tendered the Association by the Council on the evening of the last day of the session were at this hotel. The address of the President, Dr. E. M. Moore, of Rochester, was principally devoted to an extended critical consideration of Dislocation of the Radius backward (by elongation).

Perhaps the most noteworthy feature of the meeting was the set discussion on "Shot Wounds of the Intestines," in which pains was taken to secure the participation of the only two men in America who have successfully performed laparotomy, with suturing of the intestines, in these cases, as well as a number of other distinguished surgeons, not only from the State of New York, but also from other States, such as Professor Charles T. Parkes, of Chicago, Dr. Theodore R. Varick, of Jersey City, and Dr. Charles B. Nancrede, of Philadelphia. A remarkable fact about it was the entire unanimity of opinion of all the speakers, without any previous comparison of views, in regard to all the essential points entering into the matters under discussion.

The general introduction of the subject was made by Dr. William S. Tremaine, of Buffalo, who quoted from a number of high surgical authorities, only to show that their works threw but a faint light on one of the most prominent topics now upon the minds of the profession. In his conclusions he stated that the calibre of the ball, the proximity of the weapon, and the direction of the missile at its entrance to and exit from the abdomen, were all matters of importance. Prolonged shock, tympanitis, marked pain, restlessness and anxiety, indicate probable perforation of the intestine. Escape of blood from the anus, which was regarded as a valuable sign by the late Professor Gross, was rarely seen sufficiently early to be of any diagnostic significance; but when it was noticed, was a valuable sign. Dr. Tremaine in general recommended laparotomy in gunshot injuries of the abdomen; first, because the intestines might be wounded; second, because in nine cases out of ten, the removal of the blood effused would relieve the patient from much danger; third, because abdominal section added a very small element of danger to the already existing condition of affairs; and fourth, because of the assurance given to the patient that the intestines were not wounded, so that he need not anticipate future trouble from this source. When we were positive that the intestines were wounded, there was no question about the propriety of operating.

Having alluded to the three successful cases reported in America, two by Bull and one by Hamilton, Dr. Tremaine said that the best time for laparotomy was as soon as practicable after the receipt of the injury. Peristaltic action was paralyzed for a time, and this tended to prevent extravasation of fæces; an advantage which would be lost by delay. Delay also increased the danger of peritonitis. He suggested that physicians throughout the country should familiarize themselves with the details of laparotomy by practising on animals; so that when called upon to perform the operation they would be able to do it in a satisfactory manner. In speaking of the technique of the operation he recommended the suture of Lembert, and dwelt upon the necessity of leaving a clear cavity.

Dr. Joseph D. Bryant, of New York, spoke on the diagnostic signs of the involvement of the intestines, and said that there were two classes of symptoms: 1, those referable to the abdomen itself; and 2, those showing the constitutional effects of the injury. In considering the local manifestations it was necessary to study the wound of the abdominal wall, the direction of the missile, the character of the discharges, and the presence or absence of emphysema of the borders of the wound or in the neighboring connective tissue. If the direction of the ball indicated that it passed through the abdominal wall, the presumption was that the intestines were wounded. Still, cases are on record which proved the exception to the general rule. If the bleeding points in the abdominal wall would not account for all the hæmorrhage noted, it was fair to suppose that the intestinal viscera were wounded. The same was true in regard to the occurrence of bloody urine. Escape of the intestinal contents was, of course,

proof positive; but this was rarely seen early. Early emphysema of the abdominal wall was usually regarded as a certain sign of intestinal perforation; but while this was true, as a general rule, he had known of two instances in which emphysema was due to the suction action of the abdominal muscles. If there was any decomposition, also, emphysema might occur without rupture of the intestines; but such a phenomenon was almost always seen late.

Severe pain, tympanites, bloody stools and retention of urine, were all symptoms of considerable importance. While hepatic resonance might in exceptional instances be due to more or less tilting of the organ, or to the pressure of the transverse colon between it and the abdominal parietes, as a rule it was to be regarded as an almost pathognomonic sign of intestinal perforation. Among the other symptoms were shock, nausea, vomiting, extreme thirst, restlessness, anxiety and subnormal rectal temperature. Hiccough usually followed nausea and vomiting. Severe shock might, of course, be caused by profuse hæmorrhage. There were, however, very positive indications of intestinal perforation that were of early occurrence. The loss of hepatic dulness, unless previously modified by change of position or abnormal processes, Dr. Bryant thought perhaps the most reliable.

Drs. W. T. Bull, of New York, Theodore R. Varick, of Jersey City, and Charles B. Nancrede, of Philadelphia, discussed the question: Under what circumstances, and how soon after the injury, should laparotomy be resorted to, and when is the operation contraindicated? Dr. Bull said that laparotomy was indicated, in the first place, for diagnosis. Many cases presented few of the symptoms supposed to be characteristic of involvement of the intestines. Again, it was a well ascertained fact that a bullet which had entered the peritoneal cavity was much more likely to have injured the gut than not. The operation should be undertaken just as soon as the immediate shock of the injury and the removal of the patient had passed. Delay invited septicæmia, and it was best not to wait for symptoms. Exploratory laparotomy would clear up the diagnosis, and it was not without good effect even in non-penetrating wounds.

Since 1877 he had seen eight cases at the Charles Street Hospital. Five of them, treated on the expectant plan, all proved fatal. Of the other three, which were operated upon, two recovered and one died. In the first of these, which occurred in 1884, and had been fully reported, seven wounds were sutured. The second occurred in August, 1886, and had recently been reported at the New York Surgical Society. The patient's age was 25, and he was operated on two hours after the injury. Three wounds of the intestines were sutured. Two wounds of the mesocolon were not sutured, but thoroughly rubbed with iodoform. One of the appendices epiploicæ, of good size, was found torn and bleeding at its extremity, and it was tied at its base with catgut and cut off. The abdominal wound did not heal thoroughly for eight weeks, as a knuckle of intestine protruded through it. By means of a pad of iodoform gauze and wool it was gradually pushed back, while the edges of the wound were held together with two "relaxing sutures" of silver wire. To-day the man is perfectly well. The third case has never been reported, and Dr. Bull gave its history somewhat more in detail. The patient was admitted to the hospital November 6, 1886, shot in the abdomen by a pistol of 44-inch calibre. An incision was made in the median line, as in the other cases, and four perforations of the intestines were sutured. The operation lasted one hour and three-quarters, and death resulted eight hours afterwards, probably from the shock incident to the laparotomy.

None of the three cases, he went on to say, presented positive proof of intestinal perforation before the operation was undertaken; but the lesions in the last case, as in the others, indicated laparotomy. Having given a sketch of the five fatal cases referred to, he spoke of the contraindications to laparotomy. In shot wounds of the peritoneal cavity, many of them involved the solid organs, as well as the intestines, and the hæmorrhage was so profuse that no hope of recovery was offered. In injuries of the liver and spleen, and to a somewhat less degree of the kidneys, he doubted our ability to cope successfully with the condition; and uncomplicated wounds of the intestines, not accompanied by profound shock, offered the best chance of recovery. Profound shock he regarded as a decided contraindication. The exposure and handling of the viscera was in itself dangerous. Peritonitis was not necessarily a contraindication. In all cases except where the wound was posterior, and there was no wound in front, the first thing to do was to explore the bullet wound and find out where it went to. The two great rules of procedure were, in his opinion, first, to assure yourself by an exploratory incision, that the peritoneal cavity had been entered; and, second, to repair the injury that had been caused by it.

Dr. Varick said that shock with gradually increasing exhaustion, sinking temperature, and dulness of the dependent portions of the abdomen, with tympanites of the anterior portions, demanded immediate laparotomy. Having referred to tympanitic resonance over the hepatic region, he remarked that the day of the expectancy is past. The surgeon should give his patient the chance offered by laparotomy, however small it may be; for without it there is only a prospect of certain death.

Dr. Nancrede advocated laparotomy in all cases except where certain contraindications were present, and said that it should be performed just as soon as the condition of the patient would warrant the performance of a long operation attended with shock, and proper assistants and other requisites for operation could be secured. When much hæmorrhage was probably taking place it was justifiable to operate at an earlier period than in other cases. Among the contraindications was profound shock not due to hæmorrhage. It was better that every physician should not attempt to perform laparotomy, for these cases would, as a rule, do better if left to nature than if operated on by one not familiar with the procedure. Experience, he believed, was a prerequisite for suc-

cess. If possible, also, only one pair of hands should be allowed to pass into the peritoneal cavity. Unlike Dr. Bull, he thought that acute peritonitis was a contraindication; but he agreed with him that wounds of other organs might prove a contraindication.

Dr. John B. Hamilton, of Washington, D. C., thought that the first thing to do on being called to such a case was to probe the wound, if made by a small pistol, and the instrument that he recommended for the purpose was the flexible spinal probe of Nélaton. If the cavity of the abdomen was found to be penetrated, laparotomy was indicated. In case great shock was present he thought exploratory laparotomy was indicated, as it was probably due to injury of a vessel or nerve or ganglion. As to the essential features of the technique of laparotomy, these did not differ from those of the technique of ordinary laparotomy, except as regards the management of the intestines. Rigid antisepsis should be carried out, and towels wrung out of hot water containing bichloride in solution should be first placed over the abdomen. On opening the cavity bleeding points should be carefully looked for, and no abrasion should be left untouched. The intestines should be drawn out loop by loop by the fingers and allowed to remain on a towel wrung out with bichloride solution; another towel similarly treated being placed over them. When wounds were found, they should be stitched, and it was necessary to reduce pouting mucous membrane. Like the other speakers, he preferred the Lembert suture, and the material he used was catgut. The incision should be closed in the same way as in other cases of laparotomy, after the cavity has been thoroughly cleansed.

Dr. Charles T. Parkes, of Chicago, gave an admirable summary of his views on all the various questions involved in the discussion. If the abdomen was penetrated, he said, it was morally certain that the intestines were perforated, and the surgeon should be deterred from performing laparotomy only on the strongest grounds. Deep-seated emphysematous crackling he had found present in two cases, and he considered it a very valuable sign of perforation. The first thing to do in the way of treatment was to ascertain whether the wound entered the abdominal cavity. He spoke particularly of the dangers to which the patient was often subjected in removal, which should be performed with the utmost possible care when necessary.

As to the question under what circumstances should laparotomy be resorted to? he said, under all circumstances except where the patient was likely to die during the operation. The implication of other organs beside the intestines was, he agreed with the other speakers, a contraindication. As to the time for its performance, he thought it should be done just as soon as the surgeon's necessary preparations could be made. He should be guided by the same rules as in all grave surgical troubles. If perforation was known to be present, there was no contraindication; for we could not say that a case was a fatal one until after performing exploratory laparotomy. In regard to the technique of the operation, he considered the median line as the only proper point for the incision. The cavity having been opened, the next thing to do was to secure all bleeding vessels. Then the intestines were to be drawn out through the incision, which should be free, and wounds in the large intestine and other viscera looked for. Having stated that the whole small intestine should be passed through the fingers, Professor Parkes devoted considerable attention to the details of repairing perforations in the gut. Lembert's suture was the best, and he preferred puce silk introduced by means of a small round needle, either straight or curved. A double row of sutures he considered quite unnecessary. The abdomen should be closed in the usual way; great care being always taken to avoid ventral hernia. In the after-treatment the most complete rest was essential. Opium in sufficient quantity to secure this was called for, and rectal alimentation was not infrequently of service. It was desirable to keep the temperature low; but if it became high, cold should be applied externally. If it did not rise above 101°, however, no interference was called for.

STATE MEDICINE.

POISONED BEEF, CHEESE AND ICE CREAM.

Synopsis of a Paper read before the Mansfield Lyceum, on Nov. 10, 1.886. By R. Harvey Reed, M.D., Mansfield, Ohio.

Sickness from the use of beef, cheese and ice cream, a few years ago, would have been considered a pathological curiosity; at present, but especially during the summer months, the reports of alarming attacks of sickness from eating one or the other of them are a common occurrence. The frequency of these sudden outbreaks of disease, and the alarming symptoms associated with them have aroused the attention of Sanitarians, who have been diligently at work studying out their causes, and the best means for preventing them.

It was only a few months since we had several examples of the effects of eating poisonous dried beef in our own city, and unless the causes producing these toxious effects are removed or avoided, we are liable to have similar results not only occurring from eating dried beef, but cheese, and that, great American luxury, ice cream. It must be remembered that the causes producing sickness from eating dried beef are entirely different from those producing sickness from eating the so-called "measly pork," or pork affected with trichina spiralis. The poison existing in the dried beef belongs to that class of cadaveric alkaloids known as ptomaines poisonous alkaloids formed in the meat through a process of putrefaction, which no amount of cooking or ordinary heat will destroy, while that in "measly pork" is only the living embryo of the tape worm, and can easily be killed and made perfectly harmless, or at least to a great extent harmless, by cooking thoroughly. Dried beef having these poisonous alkaloids, usually is found containing great numbers of micro-organisms, yet our best authorities do not consider these the direct causes of the disease as is readily shown by the

simple experiment of cooking meat with these in, which has not any of the ptomaines, and eating it, which has been found harmless, but meat with or without these micro-organisms in, but containing these cadaveric alkaloids, is still found poisonous whether cooked or not cooked. It has also been very clearly demonstrated that these alkaloids, when extracted by chemical process and given to the lower animals or man, produce the same general symptoms, produced in persons who ate of the meat containing the same particular poison in its crude form.

The question naturally arises, how does it come we have these cases of poisoning occurring now, which years ago was never heard of? The question is easily answered: Years ago the patent quick process of curing meat was unknown. The meat was given plenty of time to cool off after it was killed, and lose its animal heat before it was salted or placed in the curing brine. Pure salt was used or a brine of salt and nitrate of potash and brown sugar, familiarly known as a "sweet pickle," in which the meat was kept for a month or six weeks, until every particle and fiber of the meat was thoroughly saturated with this preserving liquid, after which it was taken out and thoroughly dried and smoked, which usually occupied from a month to six weeks longer, thus giving plenty of time for the pyroligneous acid, which is given off freely in the smoke of an ordinary wood fire, and especially that of hickory wood, to penetrate the meat and act its part in the curative process of the meat, which is no small part I can assure you, and which gives to all smoked meat that pleasant taste and peculiar odor.

Thus you will observe the old-fashioned "Country Method," as it is sometimes called, of curing meat required from two to three months to complete it in all of its details, but if properly conducted the meat was thoroughly cured, and was, if not diseased when killed, "sweet" and healthy meat that would harm no one to use in proper quantities, and would keep for months without spoiling. On the other hand, the meat of to-day is largely supplied to our cities from "packing houses," whose managers adopt the quickest method possible, to put their meat on the market after it is slaughtered. Instead of the old-fashioned process being used, which required months, they have adopted a new process, which enables them to put their meat on the market in almost as many days.

Animals are hardly given time to die after they are taken in hand by the butcher; but a few minutes are allowed for the dressing process, and no time for cooling further than that required for the dressing and cutting into suitable pieces, when it is injected with a preserving liquid, which is actually squirted into the muscular fiber in different places in each piece, owing to the size, when the meat is ready for a little smoke to give it the appearance of cured meat, and it is then ready for sacking and placing on the market, all of which only occupies a few days. It only requires a day or two with the proper kind of a building and fire, to smoke the meat brown, and as that is all they desire, as the pyroligneous acid has already been injected into it in a chemical form with "their preserving liquid," they thus save a great amount of time in this as well as avoiding the loss of time in the old salting process.

It is in this class of meat these poisonous ptomaines are most liable to form, for the reason that sufficient time is not given, and proper care taken to thoroughly cure the meat, and if ever so free from decomposition when sent out, if not sold and eaten promptly, it is liable, especially in warm weather, to undergo a degree of decomposition, forming these alkaloids and become injurious, or if not it soon becomes sour, and thus favors the formation of these poisons, and besides, is generally filled with great quantities of micro-organisms, which are ever ready to seek a nidus in poorly cured meat, but which may or may not be injurious to the human system.

Another class of meat in which these poisonous alkaloids are liable to form, is refuse meat that is left in the shops until it has become tainted, when it is put through a curing process, and either dried or sold as corned beef, or cooked and sold as canned beef. In this case, these alkaloids may form before it is subjected to the curing process at all, and when once formed no amount of cooking will remove them, or they may, as in the former case, form after it has passed through this process. No meat is fit for use, on general principles, that responds to the acid test, or in other words, is sour, which can be easily tested by wetting the meat and applying litmus blue, which will turn red if sour; especially is meat that is supposed to be cured unfit for use that responds to the acid test with litmus paper. Cadaveric alkaloids are much more to be dreaded in one sense, than either the trichina or cysticercus, for the latter can be rendered harmless by thorough cooking, while the former is unchanged; although the parasites are to be dreaded more if once entered into the human economy than the ptomaines as a general rule, yet they are so much more easily destroyed, that their virulency is very greatly lessened. No expert can tell by looking at a piece of meat with ever so much care, or even by testing it with litmus paper, that it is free from poisonous alkaloids; the outside may be free from them, while the centre may contain them, which can only be told by cutting it open and applying the litmus test, and then it cannot always be told without eating it, or applying a chemical test or microscopical examination. The fact of it being sacked or not, has nothing to do with protecting it from these alkaloids, or of increasing them; all the benefit derived from sacking is to prevent it from getting so dirty, and avoid getting it fly-blown in the summer.

The dirty habit of chipping dried beef as it is done in our groceries is to be detested. If you will take any piece of dried beef or meat of any kind, and if you can't detect the mould on it with the naked eye, you can detect a perfect forest of this fungus with a microscope of very low power, together with dirt and filth of all kinds. Yet our average groceryman will throw a piece of meat into the chipper, and without cutting the outside off at all, which ought to be done every time. He "chips" away at it, dirt, mould and meat, until it is done, while the average dried beef eater munches it down dirt and all, just as received

from his grocer, in ignorant innocence of its filthy condition, while his poor stomach is forced to contend with a mass of filth which the owner would scarcely deign to have on his shoes.

Poisonous Cheese.—Although of less importance as food than meat, yet the amount of cheese used in this country makes it highly important that it be of the purest and best quality; that this is not the case has been demonstrated by the sudden and severe sickness following its use in many places. The frequency of these cases of so-called "cheese poisoning" attracted the attention of sanitarians a few years ago, who soon commenced to seek for the cause and search for its remedy. A few years ago, while I was practising in the Western Reserve, I met with numerous cases of cheese poisoning. More recently Michigan suffered from the same cause, and in 1883 and 1884 reported over 300 cases. Being located in the cheese manufacturing district of the Western Reserve during the occurrence of a number of these cases, I made it my business to investigate into the probable causes of these cases of "cheese poisoning." I discovered that the majority of the poisonous cases come from porous cheese. I also learned at these manufactories they allowed the curd to stand until it commenced to ferment, or get "enough of acid," as they termed it, "to make the cheese light and porous," before they would put them to press. Again, in cheese which had not been allowed to ferment so much, they would fail to press them dry enough, and leave the cheese with more or less whey in it, which would soon ferment, and again we would have a poisonous cheese.

The investigations made subsequently by Professor Victor C. Vaughan, chemist for the Michigan State Board of Health, and reported at the meeting of the American Public Health Association in 1884, showed clearly that this poison consisted in a chemical compound he named tyrotoxicon, and which he found to belong to the ptomaine poisons, and that associated with this were found to be myriads of bacteria. Whether this poison is the result of decomposition, or the presence of bacteria, is a question; although, from the results of subsequent investigations in the same direction, I am of the opinion now that this poison arises, as in the case of the beef, from decomposition, and that the bacteria aid in hastening this fermentive process.

It will be remembered that these poisonous matters were almost always found in those cheeses which, from some cause or another, had been over-fermented either before or after pressing. Thus you will observe only one or two out of hundreds might become poisonous, while the rest would be all right. As yet no person can tell by the general appearance of the cheese which is the poisonous cheese and which is not. In the average cheese manufactory, the care taken in the manufacturing of these products is to be commended, and I think the occurrence of these "poisonous cheese" and their results were a mystery to them and unexpected when they first began to occur, but with our present knowledge their occurrence should be the rarest exception.

Poisonous Ice Cream.—In 1885 one hundred cases of poisoning from ice cream was reported by the Brooklyn Board of Health occurring from the cream sold by one restaurant, whilst in Michigan, New Jersey and Ohio many other cases of a severe and alarming character have more recently occurred. In this, as in the cheese and beef poisoning, the victims are seized with severe gastro-intestinal irritation, characterized with sudden and irrepressible vomiting and purging, with dryness and constriction of the fauces, associated with more or less griping, with general prostration, and occasionally vertigo. The source of all these dreaded symptoms was eagerly sought for, and their causes, if possible solved by experiments and repeated investigations. After numerous experiments by Prof. Vaughan, of Ann Arbor, it was found that the poisoning occurring from the eating of ice cream was caused, as in the case of cheese-poisoning, by a highly toxic ptomaine known as tyrotoxicon, which discovery has been confirmed since by Dr. W. K. Newton and Mr. Shippen Wallace, the analysts for the New Jersey State Board of Health, but "the circumstances under which tyrotoxicon develops, require further study;" yet it has been shown that it may develop in normal milk, kept in clean bottles for three months, although it may occur under other circumstances much sooner, which in still more recent experiments and investigations has shown it to occur in fresh milk in a few hours.

Repeated experiments and investigations have put it almost beyond a doubt that the occurrence of these ptomaines in ice cream is due, as in the case of the beef and cheese, to the result of a ferment of a certain character; it is true that they do not occur every time there is fermentation going on, but every time they do occur there has been a process of fermentation occurring at the same time. The prevalence of cheese poisoning in Germany would tend to confirm this theory, for it is well known that the so-called "Dutch cheese" is subjected to a much greater degree of fermentation than the "Yankee cheese," while the "French cheese" is almost entirely free from ferment of any kind, and it is a remarkable fact that "cheese poisoning" is almost entirely unheard of in France, while in England and America it is of quite frequent occurrence.

It has been clearly demonstrated that it does not necessarily result from the food given the cow, for it will occur when the very best and cleanest food is given and every precaution taken to keep the milk free from all ordinary dirt. But it has been clearly demonstrated by the investigations of the New Jersey State Board of Health, that the shipping of milk before it has lost its "animal heat," especially in warm weather, and been properly "cured" by cooling and airing, does favor the production of these poisonous ptomaines. Prof. Vaughan has suggested the possibility of this poison being the chief cause of cholera infantum in many instances, the suddenness and violence of the attack in each, together with the close resemblance of the leading symptoms, is at least suggestive to the close observer, although as yet it has not been positively demonstrated.

The most important question to us all is, how are we to avoid this toxic agent? When we remember

that not only in poisonous beef, cheese and ice cream, but in the poisonous sausage of Germany, and the poisonous fish cases occurring among the natives along the Volga, they are all traceable to one general source, and that is, the presence of a certain degree of decomposition. This being the cause, then, we must apply the remedy, which is plain to every one. Measures must be taken, either legal or otherwise, to have our meats better cured; such a degree of care being compelled to be taken as will insure the perfect preservation of our meats without the least degree of putrefaction. All meats that are tainted by laying around in the boxes and on the counters of our shops should be condemned, and not allowed to be used at all where there is any possibility of sufficient taint as to favor the formation of these poisonous ptomaines.

There should be a rigid inspection of our cheese factories, and such legal restrictions thrown around them as will not permit the over-fermenting of the cure, or imperfect pressing and curing of the cheese, or of the slightest decomposition of the milk before it reaches the factory, and no cheese should be used for food that shows a decidedly acid reaction with the litmus test, when slightly moistened. No milk should be used for making ice cream that shows an acid reaction with litmus paper, not that all sour milk contains tyroxicon, but that tyroxicon has always been found in fermented or sour milk. It must be remembered that the "curdling" of the milk or cheese, by the aid of rennet (or calf's stomach), is not a process of fermentation, but a process of digestion, produced by the peptones of the calf's stomach, which, at a certain temperature, have the peculiar property of coagulating milk, but that after this digesting process has been arrested, and the coagulate has been allowed to stand for a certain length of time, at a favorable temperature, fermentation is easily induced, and it is at this stage, and under these circumstances, these chemical changes take place, and a harmless article of diet is transformed into a violent poison.

MISCELLANEOUS.

CHICAGO GYNÆCOLOGICAL SOCIETY.—The annual meeting of this Society was held on Friday, Oct. 22, 1886. The following officers were elected for the year 1886–1887:

President—Charles Warrington Earle.
First Vice-President—E. C. Dudley.
Second Vice-President—T. D. Fitch.
Secretary and Treasurer—Edward Warren Sawyer.
Editor—W. W. Jaggard.

CHOLERA IN SOUTH AMERICA.—A cablegram of November 22, from Lisbon says: It is officially declared that Rosarie, in the Argentine Republic, is infected with cholera. Several points in the country along the Rio de la Plata are suspected to be also infected.

A dispatch from Santiago, Chili, of November 22, says: The Government is preparing plans to prevent the appearance in Chili of Cholera, which is prevalent in the Argentine Republic. It is stated that a sanitary cordon will be formed in the Cordilleras. Vessels coming from ports where cholera exists will be placed in strict quarantine until visited by medical officers.

ETHICAL QUERIES AND ANSWERS.

WHAT CONSTITUTES A CONSULTATION?

TO THE EDITOR OF THE JOURNAL:

Dear Sir.—We note the query and your answer in THE JOURNAL of July 24, 1886. Suppose we put the shoe on the other foot. A regular is asked to have an irregular—say an eclectic—see his patient. He calls for the eclectic and takes him to the bedside. The patient is examined, the treatment is enquired into, disapproved, and the eclectic makes a prescription, though the attending physician does not accept it, and ignores the latter clauses of Art. IV, Sec. 3, Code—all the worse for him and scientific medicine, as the patient dies—has he not violated both the spirit and letter of the Code of Ethics?

PHYSICIAN.

Answer: The rules given for conducting consultations do not appear to have been adhered to certainly. [ED.]

PERCENTAGES ON PRESCRIPTIONS.

B. W. T., asks the following question:

"Is it considered a violation of *Ethics* for a physician to receive a percentage on his prescriptions from a druggist?"

If the correspondent intends simply to ask whether the practice of receiving from the druggist a percentage on prescriptions violates any expressed rule or clause of the Code of Ethics of the American Medical Association, we must answer, that the Code makes no allusion to such a practice either directly or indirectly.

But if he uses the word *Ethics* as synonymous with correct morals, or principles of honorable dealing, we must answer his question affirmatively. Such a collusion between the doctor and the druggist as the question implies, must be placed on the same moral or ethical plane as a similar agreement between a hospital steward and the grocerymen and provision dealers for a percentage on the orders he may give them for hospital supplies. [ED.]

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM NOVEMBER 13, 1886, TO NOVEMBER 19, 1886.

Major C. R. Greenleaf, Surgeon, relieved from duty at Columbus Bks., Ohio, and ordered for duty as attending surgeon at Hdqrs. Div. of the Missouri, and examiner of recruits at Chicago, Ill., S. O. 268, A. G. O., Nov. 17, 1886.

Major Henry R. Tilton, Surgeon, relieved from the duties of attending surgeon at the Hdqrs. Div. Pacific and Dept. of Cal. S. O. 96, Div. Pacific, Nov. 9, 1886.

Major W. E. Waters, Surgeon, ordered from Ft. Spokane to Vancouver Bks., W. T., for duty at that post. S. O. 197, Dept. Col., Nov. 8, 1886.

Par. 8, S. O. 257, A. G. O., Nov. 4, 1886, is so amended as to direct Major V. B. Hubbard, Surgeon, to report in person to the commanding officer Columbus Bks., Ohio, for duty. Par. 3, S. O. 268, A. G. O., Nov. 17, 1886.

Major Chas. Smart, Surgeon, granted leave of absence for one month. S. O. 265, A. G. O., Nov. 13, 1886.

Major D. G. Caldwell, Surgeon, granted leave of absence for one month, with permission to apply for twenty days' extension. S. O. 150, Dept. Platte, Nov. 12, 1886.

First Lieut. C. N. B. Macauley, Asst. Surgeon, granted leave of absence for twenty days. S. O. 118, Dept. Dak., Nov. 8, 1886.

First Lieut. W. D. Crosby, Asst. Surgeon, ordered from Ft. McDowell, A. T., to Ft. Bowie, A. T. S. O. 110, Dept. Ariz., Oct. 29, 1886.

First Lieut. E. R. Morris, Asst. Surgeon, ordered from Ft. Bayard, A. M., to Ft. Thomas, A. T. S. O. 110, Dept. Ariz., Oct. 29, 1886.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, DECEMBER 4, 1886. No. 23.

UNITED STATES ARMY MEDICAL DEPARTMENT

ORIGINAL ARTICLES.

PURIFICATION AND SANITATION BY FIRE.[1]

BY G. S. FRANKLIN, A.M., M.D.,

OF CHILLICOTHE, OHIO.

We find the following words in the Law of Moses, Book of Leviticus:

"But the remainder of the flesh of the sacrifice, on the third day, shall be burnt with fire." (Leviticus vii: 17.)

"And the flesh that toucheth any unclean thing, shall not be eaten, it shall be burnt with fire." (Leviticus vii: 19.)

"But the bullock, and his hide, and his flesh, and his dung, he burnt with fire." (Leviticus viii: 17.)

"And that which remaineth of the flesh and of the bread, shall ye burn with fire." (Leviticus viii: 32.)

"And the flesh and the hide, he burnt without the camp." (Leviticus ix: 11.)

"He shall therefore burn that garment, whether warp or woof, in woolen or in linen, or anything of skin, wherein the plague is; it shall be burnt in the fire." (Leviticus xii: 52.)

"Thou shalt burn that wherein the plague is with fire." (Leviticus xii: 57.)

"And if aught remain until the third day, it shall be burnt in the fire." (Leviticus xix: 6.)

Latter day philosophers may question if all Scripture was written by inspiration of God, but every true Christian believes it faithfully. Wherever a weak faith would be staggered, perhaps overthrown entirely, the stronger can find secure refuge in the omnipotence and omniscience of God, and in the admitted fact that "now we see through a glass darkly." It is, however, gratifying to the believer when the progress of science brings us to a more exact comprehension and belief in doctrines and practices taught and enjoined by the inspired lawgiver over 3,000 years ago. Of such a character is the sanitary doctrine of purification by fire.

While the practice of burning up things considered to be unclean has probably always obtained to some extent, even before the Law of Moses, it is only recently that science has given us a sound logical reason for so doing—thus extending our horizon of knowledge immensely and to our manifest advantage. In this direction, after a brief preliminary review of the subject, it is our wish to call special attention to cases where we think it will be well for us and our posterity if we destroy foulness and uncleanness by fire.

It will be hardly proper here and now to dilate upon the doctrine of noxious germs, and their spores, and their methods of multiplication around us. For our purpose it will suffice to say that all the scientific world believes them to be at least the bearers of contagious diseases, the disseminators of sickness and death with their attendant misery and unhappiness. How to limit their action—how to prevent their ravages—how to do away with them altogether, have become the pressing sanitary problems of the age. Any advance conducing to these ends should be worthy of our earnest attention and sympathy.

When the "Committee on Disinfectants of the American Public Health Association," made their report and formulated their "Conclusions," in December, 1885, the *first* and *best* treatment recommended by them "for all spore-containing infectious material," is "fire—complete destruction by burning." "For infectious material not containing spores," is "fire—complete destruction by burning." "For clothing, bedding, mattresses, blankets, rags, etc., soiled by infectious material," the first and best recommendation is, "fire—destruction by burning." Evidently this Committee, well educated and intelligent, with all the aid and assistance to be derived from the brightest lights of modern science, can only endorse and recommend the practice enjoined by Moses—and thus aid in proving, to reasonable men, the inspiration of the sacred volume.

One question remains to be discussed before we are ready to apply our doctrine of purification by fire—and that is: What are "spore-containing infectious materials?" This question opens up a boundless sea of inquiry, whose limits have been only partially surveyed by science, and its chart only here and there dotted with the islands of known facts; while numberless undiscovered continents of facts are still waiting the advent of the enthusiastic searchers who are surely on the way to find them. We know already that small-pox victims can give off contagion—that clothing, blankets, bedding, rags, soiled with its infectious germs, can disseminate the disease. Of typhus fever, typhoid fever, yellow fever, scarlet fever, diphtheria, measles, etc., we know that contagion spreads from one to another in various ways. In the lower animals we are assured that anthrax fever, pleuro-pneumonia, Rinderpest, glanders, actinomycosis, hydrophobia, hog cholera, chicken cholera, etc., are all easily transmitted after their kind. This is positive knowledge, known facts, ready for us as sanitarians to act upon in a well defined manner and after scientific methods. But who can tell us where noxious germs do not find a habitat and

[1] Read in the Section on State Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

a breeding-place? Who can say in what kind of filth an innocent germ, finding a resting place, may not develop morbific tendencies, and thereafter breed agencies of death and destruction? Who can tell where the first seed-germs of small-pox and typhus fever come from? Who can deny that every decomposing dead body may not originate a poisonous something which will be inimical to the life or health of its neighbor? We know that the history of sanitary supervision of large cities and towns shows a magnificent result for feeble efforts to destroy noxious germs and their spores or seeds, and to enforce cleanliness. The earnest labors of the health officers of London have diminished its mortality nearly 100 per cent. The bringing of purer water, comparatively uncontaminated with germs, to Munich, is said to have almost banished its greatest scourge, typhoid fever, from that city. We have no doubt that the near future will see even greater benefits from scientific sanitation, more especially when purification by fire is used to its fullest allowable limit.

And now—how, when, and where, and in what cases, shall we employ this first-class, most excellent purifier?

How to make use of Fire as a Purifier.—Expensive crematories, though all right in their place, are by no means necessary even for the decent disposal of dead human bodies. We can erect at a small cost, on a side hill, something like an old-fashioned lime-kiln, consisting of stonework for the stack, an opening below and in front for ash-pit and draft, above that an opening for a fire-box, closed by an iron door, with grate bars both above and below; above that, on the upper grate bars, with entrance and exit through a proper iron door, the place for incineration of the dead body; still above and on top of the stack, a large opening, to be closed by an iron door when necessary, serving for vent to gases of combustion, and also for the introduction of dead animals whose ashes we do not wish to preserve, or for dumping a cartload of household waste that we wish destroyed. To build and operate such a crematory would certainly be inexpensive, while it would as certainly be efficient for all purposes. Convenient brush piles could be made useful for many necessities of purification. Open fireplaces in house or kitchen could destroy many things condemned by sanitary laws. A sheet-iron oven, made to be placed over an opening in a kitchen stove, has been recommended for the destruction of the organic waste of a household. The same device, fitted to an old stove in the back yard, might be utilized to destroy the poisonous excreta of cholera, typhoid fever, etc.

When and Where to use Fire as a Purifier.—Though our knowledge on this point is limited as yet, we believe that Moses was in accord with, perhaps in advance of, our modern science, in directing nitrogenous waste to be burned on the third day, without the camp. We already know that infection becomes powerful by the third day, that zymotic and septicæmic diseases at that time reach their first acme, and that putrefactive processes are then well developed in a dead body. A widespread belief, not thoroughly authenticated as yet, so far as we know, declares that the combustion of infected material, such as bedding, can carry contagion through the air. If this be true, it would seem necessary to burn infected material "without the camp."

In what Cases shall we Purify by Fire?—First, by the cremation or complete destruction by fire of all the human dead, by the third day, if not before in the case of infectious diseases. It is not material here to do much more than to record the rapid acceptance among educated men, and especially among physicians, of the doctrine of the cremation of all human dead, as a necessity of recent advances in sanitation. Science points to it with unerring finger as the best method of disposing of the dead who are known to have been slaughtered by infectious diseases, and not much less decidedly of those whose less infectious bodies are known to develop the lethal gases of decomposition and the deadly ptomaines. Very few persons will deny the propriety of burning up the bedding, etc., of a victim of small-pox, for a sad experience has taught us that it is necessary. That a human body dead of the same disease can give off contagion is no less certain—hundreds of cases tracing their infection to a public funeral, bear witness to this admitted fact. Even if we bury such bodies hurriedly, and at dead of night, who can say how long, even in the grave, the contagious material remains efficient and powerful for evil? We know well that rags may hold infection for a long time, especially when deprived of light and air. We know that every marked excavation of earth, even in house building, or railroad cuttings, is liable to cause sickness in the vicinity, and what is the earth everywhere but the graveyard of the animal and vegetable kingdoms for ages past! We know that to build over an old graveyard is to invite death into the house. We know that water draining from a graveyard is liable at the very least to contain a dilution of noxious nitrites and deadly ptomaines, and is considered a fair explanation of a sickly neighborhood. The argument from cases of small-pox comes home more strongly to untrained intelligence, but physicians know that every dead body, not quickly and completely disinfected, is a hotbed for poisonous gases and for chemical products as deadly as prussic acid. Shall we, then, hesitate to encourage cremation of human dead, when we know that our air, soil and water, are daily making their protests against the unsanitary method of burial in the ground? With all its admitted disadvantages, and there are some hard to deny, the scale of science and reason leans most unmistakably in favor of the cremation of all human bodies.

Second. But if our present method of disposing of dead human bodies is very objectionable and decidedly unsanitary, who can defend the usual practice of allowing the dead bodies of the lower animals to lie exposed on top of the ground, or to be cast into our running streams? Do not such decomposing bodies also give off infectious diseases, and also give off the horrid putrefactive gases, and generate deadly ptomaines? Is it not a known fact that anthrax fever has been transmitted to man in the form of malignant pustule, and especially to butchers, tanners, wool sorters, furriers, horsehair cleaners, hostlers, etc., who

handle the diseased animals or their products? Is not that terrible disease, glanders, frequently caught by man? Only our great lack of definite knowledge as to the diseases of animals and their contagiousness by man limits our view in this direction. If, then, we continue to allow dead animals to decompose on top of the ground, and their remains to be mingled with the dust to be carried anywhere, everywhere, by the winds of heaven, how can we hope that the almost indestructible spores of disease may not assault us even in the seclusion of our homes and by our firesides, where we ignorantly believe ourselves secure? But even if we bury them under six feet of soil, that grand apostle of microbes, Pasteur, has conclusively proved that the humble earthworm may bring the death-dealing germ to the surface, deposit it on vegetation, or allow it to be tossed into the air by the wind, and thus permit it to begin a new cycle of destruction. Truly it would seem as if the whole animal kingdom, including man, were engaged in a most serious struggle for existence with the pestilential germ; the battle is *à l'outrance*, and we can afford to neglect no precaution that will ensure us the victory. The only safety seems to be to call to our aid the great purifier, fire, which the most recent teachings of science tell us is ready and able to utterly destroy both germs and spores that, less efficiently controlled, would increase and multiply till the whole earth might be as full of them as Russia is said to be of the dreaded Rinderpest. When will the day come when active, efficient, intelligent Boards of Health, all over the land, will bend their energies to the complete solution of this great sanitary problem; when the prevention of disease in men and in animals will be entrusted to enthusiastic and skilful hands, giving us some hope of definite progress towards health and prosperity for all?

Third. Does decaying vegetable matter breed sickness and death? Should purification by fire be applied to decomposing materials of this character? These questions have been practically answered in the actual experience of cities where great ovens have been constructed where wagon-loads of household waste, bread, meat, vegetables, bones, rags, etc., are daily purified by fire until only a valuable fertilizer remains. The decreasing mortality in such cities is a loud-voiced argument in favor of this practice, and it does not need dilating upon, beause neither sentiment or reason would oppose it, except on the ground of expense.

Fourth. The most recent developments of science are warning us to be more careful about the sputa of consumption. Very few educated men are now found willing to deny that consumption is contagious, and that the germs of contagion are contained in the expectoration. If the sputa are deposited on the floor, on the street, or in running water, who can tell where the germs may finally land, or who may be the next host! Who can say that ignorance or neglect as to the proper disposition of such infected sputa, may not transform even the most eligible health resort into a place where it is dangerous to send a consumptive patient, because the germs are there becoming more and more widespread and abundant! The certainly adequate remedy is to deposit the infected sputa in antiseptic sheets of paper, or in a cheap medicated paper cup, or on rags, or even on fine handkerchiefs in an emergency—each and every one of these receptacles to be subsequently purified by fire. The sputa of diphtheria, considered highly contagious, should be carefully treated in the same way.

The excreta of typhoid fever, and of cholera, are certainly known to contain the particulate germs of those diseases. The sad experience of Plymouth, Pennsylvania, where the excreta of one case of typhoid fever were carelessly allowed to contaminate the drinking water of the city, is trumpet-tongued in its commands to us to thoroughly purify all such excreta. What purifier can be so safe, so cheap, and so easily applied as fire?

Fifth. Does the allowable limit of purification by fire end here? Not at all. Every blighted or dead tree, or a branch of a tree, or a plant, or a vine that threatens to carry infection to its kind, should be utterly destroyed by fire. Failure to do this is a sad mistake that horticulturists frequently make, to their damage and discomfiture. They should fight the germs of infectious disease in their orchards and gardens whenever they can be found, and no agency can be used so certain and sure in its action as fire; let them tear out the offending plant and allow this beneficent purifier to do its perfect work.

The infectious diseases of the graminaceous plants are most efficiently treated in this way. The diseases called smut and rust are the best known, and cause very serious damage to crops. The straw and the stubble of such grain should be sedulously burned. Rotting corn shocks, decaying straw stacks, decomposing hay ricks, are generally the sources of infectious disease after their kind—that farmer who permits such uncleanness will surely regret it. To detail all the cases where such an efficient purifier can be, ought to be, used, would extend this essay beyond proper bounds, therefore we enunciate as a general doctrine which admits of very few exceptions—*that infectious material, foul-smelling things in process of decomposition, organic waste, useless rubbish, should be burned up completely.*

PLEUROTOMY FOR EMPYEMA. RECOVERY.[1]

BY F. C. FERNALD, M.D.,
OF WASHINGTON, D. C.

J. M. T.; male; colored; aged 40; married; one healthy child; always well until two years ago, when he had a severe attack of dysentery, followed by a hepatic abscess that pointed in the epigastrium, where it was opened by a physician; a drainage-tube was inserted and antiseptic injections employed; no antiseptic dressings; discharge ceased in four months, after which he regained his usual health.

He had no other illness until April of this year, when he began to have malaise. In June he began to have pain in right shoulder and arm; no pain, however, referable to hepatic region; later pain

[1] Read before the Medical Society of the District of Columbia, on October 20, 1886.

changed to right side of chest; then he lost flesh and strength; had hectic, night sweats, anorexia, slight dry cough, gradually increasing dyspnœa. Until he came under my care, August 8, he had worked as usual but, although his duties were very light, he was scarcely able to perform them.

Physical Examination—Inspection.—Patient looked much worn and very ill, marked dyspnœa, moderate emaciation, movements of right side of thorax in respiration markedly diminished, fulness of intercostal spaces on that side; decubitis on back, right side being too sore to lie on, and, if lying upon left side, increase of dyspnœa; right side measured one inch more than left.

Percussion and Auscultation.—On *left* side, exaggerated respiratory murmur, increased resonance. On *right* side, the usual signs of fluid in a pleural cavity. The whole of lower back was flat on percussion, upper back dull; in front flatness extended to upper border of fifth rib, and a little higher in axillary region, when patient was erect; in recumbent position the line of flatness noticeably lower, but its exact position was not accurately noted.

The patient was informed that there was probably pus in his chest, but that an exploratory puncture would be necessary. To this he consented, provided it was deferred for a few days. Four days later, at his house, the exploration was made. A long needle attached to an ordinary hypodermic syringe was used; a syringeful of dark-colored fluid, free from odor, was obtained. Patient was told that immediate aspiration was demanded, but that it would probably be necessary soon to open his chest and introduce drainage-tubes.

On the next day, August 13, T. 103°, P. 110, R. 30. Assisted by Dr. Cuthbert, I aspirated in the sixth intercostal space posterior axillary line; needle went in one and a half inches without striking fluid; it was then pushed a little further, and felt to pass through some resisting substance, after which fluid was obtained; aspiration was done very slowly; patient experienced no discomfort whatever, not even coughing; thirty-eight f. ℥ of thick fluid drawn off, of consistency and color of thick chocolate, odor of beef tea.

Microscopical examination of fluid by Dr. Shute and myself, independently, revealed a great quantity of leucocytes, granular and fatty detritus, clumps of amorphous coloring matter which was amber where thin, where thick, reddish; no liver cells and no crystals of any kind; a few red blood corpuscles.

He slept well that night; no pain. On the following day he breathed easier, appetite better, respiratory murmur over whole of previously flat area. In a few days later, however, patient gradually got worse, fluid reaccumulated; *pleurotomy* was decided upon.

August 22d, day of operation, nine days subsequent to aspiration, T. 100°, P. 120, R. 30. Noticed bulging in right axillary region, apparently due to serous infiltration of subcutaneous tissues, but no pitting on pressure. The seventh intercostal space posterior axillary line was chosen as point of incision; an exploratory puncture made at that point proved the presence of fluid, which was free in the cavity as indicated by change of line of flatness with change of position of patient. A great amount of serum oozed from the subcutaneous tissues at the point of puncture, and noticeable diminution of the bulging mentioned ensued. Fifty minims of four per cent. solution of cocaine were then injected along the line of proposed incision; five minutes later a free incision was made through the tissues into the pleural cavity. Patient suffered no pain, and was hardly conscious that anything had been done. Full antiseptic precautions were taken, including carbolic spray. Thirty-two f. ℥ of fluid of same kind as that previously obtained by aspiration, escaped. Cavity was *not* washed out. Two one-fourth inch rubber tubes were inserted, their ends barely reaching the inner wall of chest; they were then fastened by a safety pin and by adhesive plaster, their ends cut off close to the skin. The following dressing, devised by Dr. A. T. Cabot, of Boston, was then applied: First, a handful of antiseptic gauze, loosely made into a ring, was put around the tubes; a little loose gauze placed over this; next, a piece of Mackintosh, about twelve inches square, large enough to go beyond the gauze in every direction on to the bare skin; finally, twelve layers of antiseptic gauze, outside of which a layer of cotton wadding was laid, and the whole firmly bandaged, a turn being taken over the shoulder to keep the dressing from slipping down.

Patient was much more comfortable after than before the operation. Drs. Cuthbert and Shute assisted me. That evening patient was very easy; temperature normal, being 1½° lower than in the morning. The dressing was soaked through somewhat, but was not changed. Subsequently, with one or two exceptions, the dressings were changed every morning under the spray.

Two days later the urine became olive-green when passed, almost black on standing. A 1 to 15 solution of chlorinated soda was then substituted for the carbolic acid in the spray, and in a day or two later, as the urine continued dark, the carbolic acid was rinsed from the gauze that went next the skin; a few days later still bichloride gauze was used throughout. After September 17 gutta-percha cloth used instead of Mackintosh. One of the tubes was omitted as soon as the discharge became considerably diminished.

Nothing of interest occurred until about a week after operation, when there was a slight rise of temperature for a few days, during which patient complained of pain and tenderness of right side. August 31, just after taking morning temperature, patient had an urgent call to evacuate bowels; on coming from closet, said he had passed a large amount of matter like the discharge from his side, but had not preserved it; temperature had fallen 6°. The two following days he said he had five or six similar evacuations, all accompanied with slight pain, but he did not save them, although directed to do so.

Up to that time the discharge from chest was very copious, but from that date there was a marked decrease in quantity; color gradually became less and less chocolate-like, but more yellowish, until it was only a few drops in twenty-four hours. On Septem-

ber 26 *the tube was removed, just thirty-five days after operation*, and the following day he went to his work.

Improvement in his general condition followed immediately the operation, and marked improvement from the time of the unusual discharge from the bowels. He was kept in bed but two or three days.

On October 10 the sinus was entirely healed; he had gained twenty pounds in weight, and was feeling perfectly well and strong. Patient was examined by Dr. Cuthbert and myself, and we found but little retraction of the chest wall, lung normal, except a little enfeeblement of respiratory murmur at the base.

The medicinal treatment consisted of the exhibition of: Stimulants, ½ 3 doses of sulphate of soda for a few days to counteract the toxic effects of the carbolic acid; tinct. of chloride of iron and tinct. of digitalis for about a week; afterwards, elixir of iron, quinine and strychnine and cod-liver oil.

Having given the history of the case, I wish now to discuss, as briefly as possible, its most interesting features.

Diagnosis.—It is sometimes difficult to differentiate right sided pleurisy from a large abscess of the convexity of the right lobe of the liver. In this case, however, the variation of the line of flatness with the position of patient indicates the presence of free fluid, which can only be the case of fluid in the pleural cavity. The purulent character of the fluid can only be determined with certainty by the exploratory puncture, although the hectic night sweats and great constitutional disturbance lead one to suspect such. A writer in "Pepper's System" says that œdema of the chest wall is almost characteristic of pus in the pleural cavity. This symptom was present in my patient.

Here I desire to make a plea for the more frequent use of the hypodermic needle for exploratory purposes; it is of invaluable aid in diagnosis, and with antiseptic precautions is free from danger. A little longer and somewhat stouter needle is preferable in order to insure its passage through a thickened pleura, and to avoid the slight danger of its breaking.

Etiology.—As is usual in empyema, the cause in this case is obscure, yet one can not help suspecting the liver to be primarily at fault, although the evidence in that direction is by no means conclusive. The patient first had pain in right shoulder and arm, a not unusual symptom in hepatic trouble. The fluid is not what one usually gets in empyema, nor can I find a description of such ever having been found, but a writer in "Quain's Dictionary" states that in abscess of the liver a chocolate-colored fluid is sometimes present; he also says, if a patient has a sudden and copious expectoration of such colored matter, we may consider this sufficient evidence that a liver abscess has burst into a bronchus. *May not the fluid in my patient's chest also have come from the rupture of a liver abscess?* Had this been the case, however, one would expect the history of sudden and acute pain in the chest, accompanied by marked prostration or even collapse. The patient had nothing the kind, but he does say that pain and soreness of chest, with dyspnœa, followed and replaced the pain in shoulder.

You will remember that two years ago the patient had a liver abscess. *May not a purulent focus have remained dormant from that time until his present illness?* It is well known that abscess of liver is frequently multiple, and may give rise to no symptoms for years. On the other hand, had the abscess been at the convexity, he may very naturally have referred the pain and tenderness to the chest. The microscopical examination of fluid was negative as far as the liver is concerned. It is to be regretted that the patient's description of the unusual discharge from bowels can not be verified. Assuming that he was correct, *where did the matter come from?* One would suspect from the sudden decrease in the amount of discharge from the chest that followed this event, that there must have been a communication between the pleural cavity and the intestinal canal.

As was remarked before, the etiology of this case is uncertain, although one is tempted to regard the liver as the primary seat of the mischief.

Prognosis.—Cases of empyema after operation by the usual methods, even under the most favorable circumstances, usually require months and sometimes years before the final closure of the cavity. Dr. Cabot reported in *Boston Med. and Surg. Journal*, Aug. 16, 1883, fourteen cases in which he used his dressing; the ages of his patients varied from 1¼ years to 33 years; eleven recovered; two died of phthisis; one of unknown cause; the average length of time before removal of tubes was only twenty-four days. He recently told me that he has since used the same method with excellent results, and still clings to the spray. In this case reported above the tube was removed in thirty-five days.

The completeness as well as the rapidity of recovery is noteworthy. This result is due partly to the prompt recognition of the disease and to the speedy performance of the operation, but especially to the peculiar dressing used, its antiseptic character, and to careful antisepsis throughout.

A free opening into a pleural cavity, of necessity, permits ready entrance and exit of air. As a result, the lung is semi-collapsed, and expands only in proportion as the cavity is obliterated by the formation of adhesions between the pulmonary and parietal pleuræ, and by sinking in of ribs. It sometimes happens, under the ordinary treatment, that this process takes place so slowly that the lung is permanently kept high in the cavity by adhesions sufficiently strong to completely prevent its further expansion and descent, recovery then only taking place after resection of some of the ribs.

It is believed that in the Cabot dressing, the Mackintosh, lying snug to the skin as it does, acts as a valve, allowing the exit of air and fluid but preventing the reëntrance of air, thus giving the lung an excellent opportunity to expand fully and at once. The entrance of air is also hindered to a certain extent by the many layers of gauze outside the Mackintosh. The cotton wadding secures elastic pressure and keeps the Mackintosh firmly applied to the skin, yet allowing it to be lifted up for escape of air and fluid.

As to injections into the cavity, one finds equal

authority for and against. It is usually a safe thing to do, but sudden death has occurred with sufficient frequency to warn us to be very careful to use great gentleness, and not to inject a large quantity of fluid suddenly. Carbolic acid should be use neither in the injecting fluid nor in dressings next the skin. Dr. Cabot had serious symptoms in one of his cases from absorption of an exceedingly small amount of carbolic acid. In my case the prompt occurrence of melanuria gave ample evidence of absorption, although there were no other toxic symptoms.

No injections were used at any time in this case, because there were no clots in the cavity, no fetor, and because it seemed to me that by separating the pleural surfaces and by mechanical violence they would prevent the formation of the needful adhesions.

The object of having the tubes barely long enough to reach the cavity is to avoid irritating the pleura, for long tubes and catheters act as foreign bodies, and tend to keep up suppuration.

HYGIENE OF PERIODIC FEVERS.[1]

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KANSAS.

So commonly accepted is the theory that periodic fevers, neuralgias, dysentery, etc., are caused by a specific poison, that one may feel lonesome in combating it. But truth is not evolved by following the beaten path when it leads away from the truth. As neither the etiology, pathology, therapeutics or hygiene of periodical disease point to the specific factor known as malaria, whether it be a gaseous exhalation, a septic poison, a microscopic germ or a myth, we see no reason for adherence to the dogma.

Correct etiology must always precede scientific and successful hygiene. Without it all results are empirical. And when we resort to a causation of which, as Dr. Bemiss[1] says, "it must be admitted the substantive essentiality remains as yet undemonstrated," and Dr. Bartlett,[2] "neither the strongest lenses of the microscope nor the most careful analyses of chemistry have succeeded in discovering the faintest traces, even, of the composition and character of these invisible, mysterious, yet stupendous agencies," hygiene must still be empirical. If such a factor can account for the pathology of periodic fevers, we should cease to wonder at the incomprehensible results claimed for homeœopathic dynamizations. Dr. Bemiss says:[3] "During a chill the blood driven from the surface must be accounted for elsewhere, and every chill implies a condition of congestion." If this is true, it must be equally true in all cases in which the blood is driven from the surface. What are the conditions that always precede and are associated with periodic fevers? Hot days and cool nights, sensible and more or less marked alternations of temperature, conditions whose effects are always intensified where added moisture enervates during the day, and by its condensation makes the night more chilling, as in countries abounding in swamps and marshes.

During the heated days of temperate and tropical climates, especially when their impress is intensified by an atmosphere rarefied by excesssive evaporation, by excessive exposure and labor and by improper food and habits, there is always physical exhaustion. During the cool nights that follow such days there is a recession of the circulation from the capillaries of the surface, and consequent engorgement of central organs, which, in the enervated condition of the patient, often fail of normal balance. If the congestion of internal organs, through over-distension of their vessels, in fully developed ague, leads to their re-engorgement in twelve, twenty-four, forty-eight or seventy-two hours, the intervening periods growing shorter when the effect is positive and longer as it subsides, or if the febrile reaction and sweating does not wholly relieve the congestion, and because "*ubi irritatio ibi fluxus*," they are again and again engorged, each subsequent engorgement making easier the conditions of its successor, and ultimately sufficient to keep alive the action regardless of its primitive cause, then the same is true of the nightly recession from climatic influences, which must lead up to positive periodic diseases, capable of recurrence from slight exciting causes long after removal from palludal districts.

If this rational etiology is sufficient to account for periodic diseases, why resort to the gratuitous inference of an intangible malaria, which neither explains or is explained by their pathology or therapeutics, and does not aid in their prophylaxis? When we mark how wide a range the advocates of a specific "swamp poison" must give for its production, that it may cover the widespread cases of periodic fevers, we can but wonder at the general adherence to the doctrine. While the common thought is alluvial districts with abounding swamps, in hot climates, it is made sufficiently flexible to cover all cases, and accommodates itself equally well to a want or excess of factors. Thus Dr. Bancroft says: "A humid soil, abounding in vegetable remains, acted on by a heat ranging from 75° to 100° F. is the most favorable for the extrication of malaria." Pringle tells us periodic fevers have prevailed with great violence in the Dutch Brabant, where the soil is dry and sandy. Elliottson says that clayey soils are most favorable to the production of these fevers, on account of the clay retaining moisture. Linnæus wrote his "*Hypotheosis nova de febrium intermittentum causa*" to prove that intermittents abound where clay abounds, and only in such places; while McCulloch says that around the Dal in Normandy, where there is a salt marsh, scarce an inhabitant escapes ague. Though prevalent in certain districts, periodic fevers have occurred wellnigh everywhere. In this country they are found among the mountains of New England, throughout the great Valley of the Mississippi, on the Gulf coast and Pacific slopes, while neither the sea-girt isle nor the sand-bound oasis wholly escape their presence. But the advocates of a malarial poison not only give it a wide distribution, but make it equal to all emer-

[1] Read in the Section of State Medicine and Hygiene, at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] System of Medicine, by American Authors, vol i, p. 589.

[2] Treatise on Fevers, p. 347.

[3] Op. cit.

gencies. Thus Dr. Bemiss (op. cit.) says it is a specific poison, probably an organism, and not capable of reproduction within the system, but is so slowly removed that after long systemic residence it may cause vernal attacks, though the subjects of these long delayed attacks have never suffered a paroxysmal seizure.

If, in the production of periodic fevers, we can eliminate every etiological factor except alternating heat and cold, and if these alone are not favorable to the production of malaria, or malaria bacillus, and will account for all their phenomena, while an undemonstrated malaria cannot, why longer adhere to an occult entity? A careful study of individual cases of endemics or epidemics will always result about as follows: Aug. 30. Called to see A., aged 7 years. Days hot and nights cool. House healthily located. Patient had remittent fever; had slept for several nights, without cover, between open windows. No other member of the family similarly exposed, and no other case.

Sept. 1. Saw B., aged 30; laborer. Had congestive remittent. Worked hard during the day, and slept in his damp clothes without sufficient cover. D., occupying the same room, put on dry night clothes and slept between blankets, and had no fever. Sept. 2. Saw E., farmer. Had intermittent. Enjoyed the cool of the evening air in his shirt-sleeves and was not careful about keeping well covered at night. Sept. 3. Called to see the family of E. Three members, father and two children, sick with "malarial" dysentery. They were living on the upland prairie, in a newly erected shanty, built in a cornfield, the corn cut up for about twenty yards about it. Want of circulation made the days warm, while condensation by surrounding vegetation made the nights very chilly. The people were poor, badly fed, and regardless of protection against the fall of temperature. And so we find those living on a knoll, near a body of water, especially if the water is shallow and evaporation increased by the heat of the earth beneath, suffering from periodic fevers, while those protected by a belt of shrubbery, or living over the knoll, escape.

On the other hand, we have such cases as that of the English surgeon, who had his bunk erected over a marsh in Hindostan, where, wrapped in blankets, he slept with impunity, while the careless soldiers who slept in the neighborhood were decimated by congestive fevers, and those living on the Pontine marshes in comfortable homes, and careful about night exposure, escaping, while their neighbors, disregarding such precautions, become victims of the Pontine fever. Women, though more delicately organized than men, and more poorly clad during the day, often escape because more careful to cover their nakedness at night, while men and children, of either sex alike, lie half covered at night, and suffer from periodic fevers. So we might continue to elucidate, but such cases are sufficiently suggestive.

The "malaria" so common to swamps, lagoons and marshes, to alluvium subject to overflow, or grounds made damp from other causes, in locations and at seasons when the days are hot and the nights cool, and not common to other localities, altitudes and seasons, is not a septic poison or a microscopic germ, but an alternating temperature, whose impress is always intensified by abounding moisture, and whose etiology is sustained by the pathology, treatment and hygiene of the diseases induced.

The pathological conditions are so marked they leave no question. Whether fever is produced or not, there are certain well known pathological changes. There is recession of the circulation from the surface and consequent infarction of central organs which, when the chill is severe, is sometimes so great it may be demonstrated by a post-mortem. There is reactive force and engorgement of the superficial capillaries, followed by excessive sweating, consequent upon over-stimulation of the sudorific glands. If the periodic influences are continued, they are marked by certain permanent changes in central organs, usually most prominent in the spleen and liver. In the spleen, for example, there is emphraxis, and in some cases of the pernicious type, rupture, ulcers or gangrene. Following the splenic engorgement is hypertrophy or hyperplasia and consequent leucocystosis or leukæmia, and hæmorrhages. All these conditions may occur without febrile paroxysm, and when present may keep up the fever without regard to the primary cause, for, as Dr. Bemiss says (op. cit): "the blood driven from the surface must be accounted for elsewhere," and the mighty chill that follows the exhausting heat of damp climates will produce a corresponding degree of central congestion, and in an enervated system lead up to a pronounced chill and fever.

The advocates of "malaria" admit the necessity of alternating temperature. Thus Dr. Elliotson says:[4] "During the heat of day there is a disengagement of malaria, and consequently when night comes on there is more precipitated. Cold and wet are always most operative after heat." Does the learned professor add anything by assuming a factor that explains nothing? Dr. Bemiss (op. cit.) tells us "there is no other known agency capable of originating the morbid phenomena characterized by such marked periodicity." Periodic reactionary effect marks many diseases not consequent upon "malaria," as uræmic fever, hectic fever, etc. While "malaria" has never been demonstrated, periodic alternations of temperature are demonstrable, and their natural consequent is periodic disease. Periodicity is a great law of nature. It marks every function in the economy of life. As pathology is only morbid physiology, we may infer that pathological periodicity is only a diversion of physiological activity, and it is far more rational to refer it to periodic alternations of heat and cold than to an assumed microscopic swamp devil sent to "torment us before our time."

Therapeutics not only confirms our etiology and pathology, but disproves the idea of a specific poison, whether it be a septic decomposition or a microscopic germ. The sulphate of quinia outranks every other agent in the treatment of periodic fevers, not because it is the most powerful antiseptic or germicide, but

[4] Practice, p. 257.

because of its action upon the trophic nerves. Dr. Bemiss but echoes the opinion of all when he says "the great indication is to secure cinchonism as speedily as possible." And yet, we must say this *cum grano salis*. He who gives it as a routinist may kill his patient with the best antiperiodic in the pharmacopœia, for it is powerless to cure when permanent organic lesion keeps up the periodic action. In antiperiodic doses it equalizes vital force by promptly and powerfully impressing the central nervous system, thus relieving engorged and congested central organs. In toxic doses it preserves the restored balance. In antiphlogistic doses, even when there is organic change beyond its reach, it temporarily restores balance, arrests destructive metamorphoses and reduces pyrexia.

What has hygiene accomplished under the prevalent idea of causation? Have any means been discovered to destroy the undiscovered entity—malaria? The drained marsh, until thoroughly dry, has only increased "palludal" fevers by increasing evaporation aud consequently intensifying diurnal and nocturnal alternations of temperature. Germicides and antiseptics are impracticable and useless.

The only effective, because the only rational hygiene, is found in avoiding exhausting labor during the heat of the day, replacing, as the chill of night approaches, damp clothing for such as is dry and warm, and sleeping between comfortable blankets, keeping out of the chill and damp of night, or providing against it with proper clothing, and in avoiding all irregularities, and by healthful exercise and diet. By such precautions we may remove from the people the undefined dread of an indefinable malaria, rob the routinist of his ever-ready cry of malaria and its corollary, quinine, and feel as safe at the tropics as the poles; as safe on the swamp as on the mountain.

THE NECESSITY OF ABDOMINAL SECTION, AS ILLUSTRATED BY AN UNUSUAL CASE OF OVARIOTOMY.[1]

BY C. R. REED, M.D.,

OF MIDDLEPORT, OHIO.

An ovariotomy to attract the attention of the profession at the present time, must be unique and have some characteristics of peculiar interest. To open the abdominal cavity as an exploratory operation for the purpose of making clear an obscure diagnosis, to remove an ovarian cyst or tumor, a diseased ovary or tubes, to stitch up a wounded viscus, and to remove foreign matter from the peritoneal cavity, is now of every day occurrence, and almost universally admitted to be legitimate surgery. The operation as first performed by McDowell to remove an ovarian cystic tumor when the health and life of the patient was endangered by mechanical pressure on adjacent organs or structures; or that of Battey of removing the ovaries to hasten the menopause, thereby arresting the monthly congestion of the pelvic organs; retarding the growth of tumors, checking hæmorrhages and curing many diseases of the pelvic organs; and the exploratory sections as now advocated by Tait and others are so frequent as to almost cease to challenge attention. Without abdominal incisions and explorations the knowledge of pathological condition is often impossible; the diagnosis is obscure, the indications of treatment are uncertain, the patient does not receive the necessary treatment, the physician's reputation suffers and a post-mortem examination reveals "what might have been." The success attending the operations, the necessity for which are made clear by exploratory incisions of the abdominal walls, is such as to deprive ovariotomy and kindred operations of their former terrors; to greatly enlarge the resources of the surgeon and to give new hope to the otherwise doomed patient.

The following case, I think, is a striking example of the necessity of abdominal incision and exploration without which its nature would not have been known, the treatment would have been unsuccessful, the patient's life would have been a sacrifice to ignorance, and the grave would have kept the secret of its true pathology. As an illustration of the utter inefficiency of drugs in similar cases and the imperative necessity of bold and prompt surgical interference, no more striking instance, I believe, is on record. As a case of simple ovariotomy, after the diagnosis was made clear by abdominal section, there is nothing unique or unusual connected with it; but its history, the attending symptoms, the means used for relief give it, we think, an unusual interest. The symptoms during the few days, immediately preceding the operation, were such as had not before come under my observation in cases of ovarian cyst, neither had I seen similar symptoms described in the literature on the subject. The illness of the woman did not lead us to suspect an ovarian cystic tumor or any disease peculiar to her sex. I expected to find an entirely different pathological condition, and but for the exploratory incision, or an autopsy, the cause of the symptoms and the death of the patient, which I believe would have been inevitable, would still have remained a mystery; but the abdominal section at once made the diagnosis clear and the treatment plain.

In the afternoon of August 25, 1885, I was called in consultation with Dr. J. W. Lilly, of Pomeroy, Ohio, to see Mrs. B., married, 34 years of age, the mother of seven children, the younger two being twins, 12 months old. She was then menstruating, having been regular the past three months. Dr. Lilly had called on me in the forenoon, gave me a history of the case, the symptoms and treatment, and requested me to see the patient with him. I gave an opinion then that nothing but laparotomy or an abdominal incision would reveal the true condition and indicate the treatment. Mrs. B. had been in good health up to within a few days prior to this date. The preceding four days she had vomited almost constantly, the last forty-eight hours it being stercoraceous. There was obstinate constipation, indicating obstruction of the bowels, cathartics, injections and local applications had been used without avail.

[1] Read in the Section on Obstetrics, at the Thirty-Seventh Annual Meeting of the American Medical Association.

Her pulse was 120 and weak, extremities cold, body covered with cold perspiration, strength greatly depressed from constant nausea and vomiting; her appearance and general symptoms betokening rapid dissolution. Her mind being clear abdominal section was proposed as a possible means of relief, to which she and her husband readily consented. She was given a ½ grain of morphia sulphas by subcutaneous injection, and Dr. J. H. Hysell was sent for to administer the anæsthetic. She was placed on the operating table, the abdomen laid bare, and washed with carbolized water, when it was discovered that the abdomen was enlarged and irregular which was attributed to fæcal accumulation. She came promptly under the influence of the anæsthetic, the A. C. E. mixture, when an incision was made in the linea alba, midway between umbilicus and pubes, four inches long; a tumor appearing at the opening, the incision was enlarged to eight inches, when it was found to be a cyst of the left ovary with adhesions to the abdominal walls and also to the descending colon. The former were readily broken up, the latter with difficulty, and these were believed to be the cause of the obstruction and constipation. There was general peritonitis, both of that portion lining the cavity and that investing the intestines, the tumor had a mottled appearance indicating congestion. The exploring needle of a hypodermatic syringe was thrust into the tumor, when the canula filled with a chocolate colored fluid. We had not come prepared to deal with an ovarian cyst; we had neither trocar, or hæmostatic forceps, and were warned by the gentleman administering the anæsthetic that in the patient's depressed condition no time could be lost in sending for the necessary instruments, but the operation must be completed with what we had on hand. It is worthy of notice that no vomiting occurred after the incision was made, neither did it occur during convalescence. We determined to remove the tumors. After the adhesions were broken up the tumor was punctured with a scalpel and the fluid was conveyed away as best we could, by thrusting a rubber tube into the opening made by the knife. The pedicle was short and thick; it was transfixed by a double silk ligature, one end hanging from the lower angle of the wound for the purpose of drainage; the abdominal cavity was sponged dry, the incision closed by deep silk sutures and adhesive plaster. The patient rallied well from the anæsthetic; her condition improving as soon as the nausea ceased; her bowels were spontaneously moved on the eighth day; convalescence was interrupted on the tenth day by a severe attack of capillary bronchitis, caused by the injudicious use of ice to lower the temperature. The ligatures on the pedicle came away on the fortieth day, and since that time she has had her usual good health; menstruated after the third month and is now two months *enceinte*.

The minor details of this case have been given in this paper because of its obscurity prior to abdominal section; the unusual symptoms attending it; the treatment prior to operation being based on an obscure diagnosis and therefore futile, and the difficulties of an operation in the absence of what are considered essential instruments. In considering the above case the following questions are suggested:

1. Was the ovarian cyst with its adhesions to the descending colon the cause of the obstruction of the bowels? 2. Would the exploring needle have made the diagnosis clear without abdominal section? 3. With the probability of the patient dying under the operation would it have been better practice to have tapped with the trocar, and deferred the removal of the tumor? 4. As it has been shown by the large experience of Lawson Tait and others that abdominal section and exploration is under aseptic treatment, attended with little or no mortality, is it not the imperative duty of the physician to open the abdomen in all cases of doubtful diagnosis where general treatment has failed to relieve the symptoms. 5. In cases of slight enlargement of the abdomen, attended with intestinal obstruction, as in this case, should the physician wait until symptoms of approaching dislocation occur before resorting to abdominal section? And should the operation be performed as a means of diagnosis only, when the symptoms are not urgent?

FRACTURES OF THE FEMUR IN CHILDREN,

Treated by Bryant's Method of Vertical Extension.[1]

BY J. M. BARTON, A.M., M.D.,

SURGEON TO THE JEFFERSON COLLEGE HOSPITAL, PHILADELPHIA.

The treatment of fractures of the femur in children has always been attended with great difficulty. The fragments are so short they are not readily grasped by the dressings, and the thigh is usually so comparatively large and soft that the extremities of the fragments are with difficulty maintained in apposition. None but the most firm and secure dressings will be retained, as all the efforts of the sufferer are directed towards their removal. The dressings are soon soiled by the discharges from the bladder and bowels, the frequent renewals interfering with the process of repair. The displacement of the dressings by the patient, causing injurious pressure, and the uncertainty which the surgeon feels concerning the condition of the limb, necessitate frequent examinations, especially when the child shows evidences of discomfort.

The disappointment occasioned by these dressings is perhaps best shown by the fact that in St. Bartholomew's Hospital Reports for 1867, we find that Messrs. Paget and Callender report that they treat many cases of fracture of the thigh in children negatively, without splints, all apparatus being dispensed with, "the child being laid on a firm bed with the broken limb, after setting it, bent at the hip and knee and laid on its outer side."

The plaster dressing is a valuable one in these fractures, and as usually applied, with short splints around the femur and a long splint reaching from the axilla to below the foot, thoroughly covered in with plaster bandages, and either varnished or covered with oiled

[1] Read in the Section on Surgery, at the Thirty-Seventh Annual Meeting of the American Medical Association.

silk to protect it from the discharges, has often given admirable results.

If dressed immediately after the injury, the subsequent swelling may cause injurious pressure, and if the dressing be made loose enough to allow for the swelling, or be deferred until it has occurred, the fragments will be but poorly supported after the swelling has disappeared. Some of the discharges may get under the dressings without being suspected and cause considerable irritation. From these causes and from uncertainty regarding the condition of the limb, it not unfrequently happens that the dressing has to be removed once or more during the treatment.

As it is usual to give ether in applying these dressings, and as the surgeon scarcely cares to delegate it to an assistant, its frequent application is a great objection, especially in hospital practice. On removing these dressings when the treatment has terminated I have often felt considerable uncertainty as to what kind of a limb would appear.

A method of treating fractures of the femur in children by vertical extension is described and claimed as original by Bryant in his "Practice of Surgery," published in 1873, and also in the later editions. This method, though possessing many advantages, is unnoticed by the surgical text-books, and but few surgeons among those of whom I have inquired have had any experience with it. Under these circumstances I feel warranted in bringing this subject before this Association, and reporting five cases that I have treated by this method. Bryant flexes the limbs to a right angle with the pelvis, fixes them by some light splint, and then they are "hoisted upward and fastened to some cradle, hook or bar above the bed." This has been slightly modified, substituting counterpoise weights for the simple fastening.

Case 1.—Mary F., aged 2½ years, was admitted to the Jefferson College Hospital July 6, 1884, with a fracture about the middle of the left femur. I applied the plaster dressing, which had served my purpose well in previous cases, but was obliged on the second day to remove it, and I substituted this method. The usual adhesive plaster, carried well above the knee, the same as is used for making extension in adults in the ordinary method of treatment, was applied to each limb, to the sound as well as to the injured one. After the plaster had become firm, a light wooden frame, extending across the bed and about four feet above it, was placed in position, such a frame as is usually used for swinging fracture boxes, etc., from, consisting simply of two uprights, one on each side of the bed, and a light bar connecting them. In the lower edge of the transverse bar four iron pulley wheels had been fastened, two about the middle, a few inches apart, and one at each end close to the "upright." The limbs of the child were elevated to a right angle with the rest of the body, the cord from one of the adhesive plasters on one of the limbs was carried through one of the middle pulleys and then through the pulley at the end of the bar; here the weight was attached. The cord from the other leg was then carried in a similar manner to the other side. The heaviest weight was attached to the injured limb, and only enough to the sound leg to keep it fairly elevated. The fracture came immediately into good position, but for greater safety a few short and narrow splints were applied around the seat of injury, supported by a light bandage. The child was comfortable at once and continued so.

The apparatus was removed about the twentieth day, as firm union had occurred, the child was kept in bed a few days longer, and then permitted to creep and walk around the ward. She was discharged thirty-five days after admission with a perfect leg, in which neither shortening nor deformity were detected.

Case 2.—Nils Christian Thompson, aged 4 years, injured on shipboard coming from Denmark, was admitted to the Jefferson College Hospital on July 21, 1884, with a fracture of the femur at the junction of the upper and middle third, a frequent seat of fracture in children, and as the upper fragment has as strong, if not a stronger tendency to be displaced forward than in adults, this method of treatment is particularly well adapted for remedying this deformity. This patient was placed in a precisely similar apparatus, in which he was kept for twenty-five days. The boy was discharged well, with less than one-half inch of shortening, August 10, and with the limb in perfect position.

Case 3.—Gustav S., aged 3 years, was admitted on February 12, 1885, to the German Hospital in Philadelphia. His fracture was also at the junction of the middle and the upper third. After an unsatisfactory trial of another method I placed him, a few days after admission, in an apparatus similar to those before described. He was discharged on April 23, having been running around the wards for several weeks under treatment for another affection. Dr. Rehfuss, the resident physician, who examined him before he left, tells me that the limb was in perfect position, without perceptible shortening, and that he had full and free use of it.

Case 4.—John W. MacA., æt. 6 years, was admitted to the German Hospital May 9, 1885, with a fracture of the upper part of the right femur. He was treated in the same manner, and was discharged July 6 with a perfect result.

Case 5.—Benj. H., aged 2 years 3 months, a private patient, fractured his left femur about its middle on November 2, 1885. He was placed in the same form of apparatus, and made a very satisfactory recovery with good union in about three weeks.

None of these children seemed to suffer the slightest inconvenience or annoyance from their position; they amused themselves by playing with their toys, appeared quite happy and entirely free from pain. As the limb cannot get out of position while full extension is maintained, and is so readily examined, the surgeon need feel no anxiety regarding its condition.

It is rarely necessary to remove the light bandage and splints around the femur, and when necessary can be done without assistance, and without paining or frightening the patient or displacing the fragments. It is quite as easy to measure the length in this position as in the treatment by horizontal extension in the adult. The swelling is usually but slight, but if

great does not interfere with the treatment. I have never seen, while using this method, those huge masses of redundant callus which are not infrequently found in the fractures of restless children.

The child is readily kept clean, a folded sheet placed under the buttocks to receive the discharges, and removed when soiled, is all that is necessary. The nurse grasps the child by the feet, and gently raises it some inches from the bed, and as it is nearly counterpoised, it can be kept in this position with but little effort on her part, while the hips and back are washed and a clean sheet put in position. In winter some of the bedclothes are given a turn around the limbs and hang suspended by the extension cords.

The amount of weight used for extension depends, of course, on the size of the child, but about the same amount as would be used in horizontal extension will be found quite enough.

Dr. D. W. Graham, of Chicago, had followed the method described by Bryant, which was the same in practice, but a little more simple in its application, had found it a comfort to the patient and successful in its results, but he did not see the need for using any coaptation splint.

Dr. I. N. Quimby, of New Jersey, said he could not see any reason why it should be preferred to the horizontal extension and counter-extension heretofore used.

Dr. Link, of Terre Haute, said that for many years he had not used any extension or counter-extension in treatment of fractures of the femur, nor had he found it necessary to use coaptation splints. He simply treated them by flexing the thigh upon the body and the leg upon the thigh, everting the limb and putting it in a position of muscular relaxation on a bed of bran.

Dr. Griffith, of Kansas City, expressed the belief that one great advantage in the vertical suspension of the limb in treatment of fractures of the femur, was to be found in the relaxation of the psoas magnus and iliacus muscles.

A CASE OF PLACENTA PRÆVIA.

BY H. VON SWERINGEN, A.M., M.D.,
OF FORT WAYNE, INDIANA.

Believing it to be the duty of the physician to report his failures as well as his successes, I wish to place on record the following case of placenta prævia, making the fifth that has occurred in my practice, and the first and only one that has resulted fatally.

On Sunday, September 26, 1886, about 1 P.M., I was called to see Mrs. J. L., who, as the messenger (the husband) stated, was about to be confined with her tenth child, but had not during the entire period of her pregnancy, felt right or natural, or as she felt during her previous pregnancies, and was therefore in constant fear that all was not well with her. She seemed to have a premonition that she would not live through her lying-in, having spoken of it frequently to her neighbors, friends and husband. Her mother and sister were buried with babes in their arms, each having died of hæmorrhage from placenta prævia, a fact which no doubt increased her fear, and which would seem to indicate if not a predisposition to that condition, at least a tendency to bleed, or a hæmorrhagic diathesis.

I learned that she had quite a number of spells of flowing during the last three months of her term, and, in fact, an occasional "showing" prior to this period, even from the very commencement of her pregnancy. A few days prior to my visit her family physician was called in, and after making a digital examination, informed the husband that he had better get some other doctor to attend her accouchement, inasmuch as it would not be safe for him to do so because of several cases of blood-poisoning he then had under treatment.

When I saw the patient for the first time she was pale, anæmic, had light hair and blue eyes, a blonde in complexion, of about 40 years of age. She was complaining of slight pains in her back and an occasional flowing. An immediate digital examination confirmed the diagnosis already formed and very naturally suggested by the history of the case, revealing a more rigid os than would naturally be expected, dilated to the size of about a nickel; forcing my index finger through it, its extremity came in contact with a boggy substance, not unlike a firm clot of blood, which, at first I thought it might be, but concluded not to disturb it. Pushing my finger as high as I could to the right of this substance, I succeeded in barely touching some part of the head, which seemed to be gradually descending from the right iliac region. I gave her a full opiate, requested her to remain quiet, and, in the event of any more hæmorrhage occurring, to summon me.

On the following Tuesday afternoon I was again called, simply to see how the case was progressing, and found her in about the same condition as when I left her; her pains amounted to nothing, not even sufficient for dilating purposes. The os was a little more enlarged, probably to the size of a quarter of a dollar, and slightly softer; and the head was so high up that I failed to touch it. I administered oxytocics with opiates and promised to be back and remain with her during the night, assuring her and the friends that the very moment the mouth of her womb was large enough to admit the introduction of my hand I should endeavor to get the babe, for upon its speedy delivery depended her safety. My intention was to apply the long forceps and bring the child (which was now dead) down so that its head or body would cover the site of hæmorrhage, and leave it there for a time as a tampon, until her pains would become strong enough to finish the delivery and prevent post-partum bleeding. I left her bedside and returned directly after tea to remain with her during the night. Throughout the entire night her condition remained about the same, her pains amounting to nothing, no hæmorrhage, however, and the os but very little increased in size. It was about 8 o'clock when I left her on Wednesday morning. Throughout the day I visited her at intervals of an hour or two.

At about 6:30 in the evening I again visited her, and had barely reached her bedside when a very copious hæmorrhage took place. I immediately

tamponed her, using severai silk handkerchiefs for the purpose. I now concluded to wait until about midnight before resorting to more heroic measures, feeling hopeful that the tampon itself would not only prevent further bleeding but aid in softening and dilating the os uteri.

Every little while she announced that she was flowing, but an examination would as often prove the contrary; she simply imagined she was. She bore the slightest examination badly, seeming to be supersensitive to the mildest manipulation, and I therefore decided to get her in position and under the influence of chloroform when I removed the tampon, and directly after the removal attempt the delivery of the child. In the meantime all the necessary preparations were made, the attendants instructed, and the husband informed that if he desired the attendance of one or more physicians he had better notify them to còme at once. He replied that he was perfectly satisfied to trust the life of his wife in my hands. Had I not been successful in the treatment of four similar cases, however, I should have insisted upon him calling in one or more physicians. With confidence born of previous success, I therefore trusted in my own ability to conduct the delivery safely. The lesson which the sequel has taught me will not be soon forgotten.

About 1 A. M., she called me anxiously, saying that she was now positive that she was flowing badly, which announcement proved to be only too true, although very little if any impression had yet been made upon her pulse. After getting her in the proper position, I administered chloroform, removed the tampon, and found that by a little effort I could introduce my hand; this done, I discovered that at least half of the placenta was detached and presenting from the posterior lower segment of the uterus, the cord was pulseless, the head was still high up in the iliac region, and hæmorrhage was going on. Abandoning the thought of making use of the forceps, I reached up and brought down one foot; reached after the other, and *while* bringing it down, before the version was effected or completed, a perfect torrent of blood burst forth and all was over; not a pulse-beat, not a heart throb, not a sigh, not a groan—she was dead; dead before the child was fully delivered, and yet not three minutes was required in the operation of version and extraction. My clothes were all saturated with blood, of which a large pool lay upon the oil-cloth upon which I was kneeling during the manipulation. Recovering somewhat from the shock so sudden and yet not wholly unexpected death occasioned, I sent for a physician; desiring that some professional colleague might at least see the situation before it was in any wise changed by those in attendance. In a few minutes Dr. Howard McCullough came into the room, and took in the situation at a glance.

The only difference I have observed in this case from the previous four successful cases, is the fact that in the latter there were no pains of any account whatever, and all the blood in her body seemed to be in her uterus and placenta; also the fact that there was a larger area of surface of the placenta detached, possibly.

MEDICAL PROGRESS.

HEALED SHOT WOUND OF THE SPINE.—At the xvth Congress of German Surgeons, PROF. CZERNY, of Heidelberg, reported the case of a young woman, æt. 22, who, while at her toilet, was shot in the back by her jealous husband, May 6, 1873. The ball entered one-half inch to the left of the last dorsal spinous process. She sank with a cry. The man shot himself dead. I was called soon and found paraplegia, both legs paralyzed to the pelvis, and sensory paralysis on the right to the inguinal fold, on the left of the knee. Reflex irritability was entirely preserved, and all the paralyzed muscles reacted promptly to weak faradic currents. No twitching or contracture in the said muscles. Bladder and rectum were completely paralyzed. Catheterization for three days when the bladder emptied involuntarily on getting full. Pulse and temperature normal, mind always clear. The course of the ball and the complete immediate paraplegia pointed to the conclusion that the cord must have been perforated by the ball. Presumably the bullet had lodged in a vertebra as no symptom of injury to the abdominal organs was noticeable. I therefore did not consider myself justified in sounding, washed the wound superficially with carbolic, covered it with carbolized cotton, and thus the wound healed in a few days. The patient could soon sit propped up in bed, and was placed in a reclining chair after fourteen days. From the beginning of June she rode about several hours daily in a roller chair and continued this, weather permitting, until late in the fall; meanwhile her appetite continued excellent, general condition good and her appearance notably fresh and bright. In the early weeks the paralyzed muscles were faradized daily, yet contractility gradually disappeared. This so excited the patient that further faradization had to be dispensed with. The legs, which so far had remained lax, became stiff and inflexible at the end of summer, and began to atrophy with remarkable rapidity. In November decubitus developed, starting from urine excoriation, and spread rapidly over the sacrum. From this on there was fever, and the fatal end (December 4, 1873) was hastened by an erysipelas spreading from the wound over the whole back and thigh.

The ball was found healed in between the last dorsal and first lumbar vertebræ, to the right of the middle line. The spinal cord was almost completely severed, that below being somewhat thickened, whilst upwards to the second dorsal vertebra it was in a state of suppurative softening. The dura mater presented a scar at front and back, where it was also adherent to the bone. Pulmonary atelectasis of moderate degree, somewhat fatty liver, chronic cystitis.

The objection may be made that a suppuratively softened cord is not a healed cord. We know how difficult it is to distinguish yellow softening of the brain from a fresh abscess, yet to me the preparation makes more the impression of an acute ascending myelitis than of an abscedizing. Then it must be noted that the patient rode about several months in

subjectively good condition, and that the bullet was completely encapsulated.

Since before the time of antiseptics a severe shot wound of the spine has healed through the avoidance of probing and by careful washing out, a similar result ought now with like care to be all the easier achievable.—*Annals of Surgery*, November, 1886.

Diagnosis of Infantile Diseases.—In a recent number of *L'Union Médicale du Canada*, Dr. Bradley gives the following summary of points on the diagnosis of disease in infants:

1. Congestion of the cheeks, excepting in cases of cachexia and chronic disease, indicates an inflammation or a febrile condition.

2. Congestion of the face, ears, and forehead of short duration, strabismus, with febrile reaction, oscillation of the iris, irregularity of the pupil, with falling of the upper lids, indicates a cerebral affection.

3. A marked degree of emaciation, which progresses gradually, indicates some sub-acute or chronic affection of a grave character.

4. Bulbar hypertrophy of the fingers and curving of the nails are signs of interference in the normal functions of the circulatory apparatus.

5. Hypertrophy of the spongy portions of the bones indicates rachitis.

6. The presence between the eyelids of a thick and purulent secretion from the Meibomian glands may indicate great prostration of the general powers.

7. Passive congestion of the conjunctival vessels indicates approaching death.

8. Long-continued lividity, as well as lividity produced by emotion and excitement, the respiration continuing normal, are indices of a fault in the formation of the heart or the great vessels.

9. A temporary lividity indicates the existence of a grave acute disease, especially of the respiratory organs.

10. The absence of tears in children four months old or more suggests a form of disease which will usually be fatal.

11. Piercing and acute cries indicate a severe cerebro-spinal trouble.

12. Irregular muscular movements, which are partly under control of the will when patient is awake, indicate the existence of chorea.

13. Contraction of the eye-brows, together with a turning of the head and eyes to avoid the light, is a sign of cephalalgia.

14. When the child holds his hand upon his head, or strives to rest the head upon the bosom of his mother or nurse, he may be suffering from ear disease.

15. When the fingers are carried to the mouth, and there is, besides, great agitation present, there is probably some abnormal condition of the larynx.

16. When the child turns his head constantly from one side to the other, there is a suggestion of some obstruction of the larynx.

17. A hoarse and indistinct voice is suggestive of laryngitis.

18. A feeble and plaintive voice indicates trouble in the abdominal organs.

19. A slow and intermittent respiration, accompanied with sighs, suggests the presence of cerebral disease.

20. If the respiration be intermittent, but accelerated, there is capillary bronchitis.

21. If it be superficial and accelerated, there is some inflammatory trouble of the larynx and trachea.

22. A strong and sonorous cough suggests spasmodic croup.

23. A hoarse and rough cough is an indication of true croup.

24. When the cough is clear and distinct, bronchitis is suggested.

25. When the cough is suppressed and painful, it points toward pneumonia and pleurisy.

26. A convulsive cough indicates whooping-cough.

27. A dry and painless cough is sometimes noticed in the course of typhoid and intermittent fever, in difficult dentition, or where worms are present.—*London Medical Record*, Oct. 15, 1886.

Excision of the Hip in Pulmonary Tuberculosis.—H. Bresson reports the following case which bears on the question of surgical intervention in tuberculous subjects. E. G., æt. 9 years, came under treatment May 16, 1885, for hip disease on the left side. No precedent tuberculous history, either personal or family. The beginning of the disease was obscure: for two months there was pain and lameness, and the child was kept in bed for four months. She then went about for six months, until the pain and lameness returned. The limb now shortened and rotated inwards, and soon intense pain at the knee forced the child to go back to bed. The cautery was used without result, and the condition became worse. She was then kept in immovable apparatus for three and a half months, and was afterwards free for six months, her condition having improved. At this time she already coughed a great deal; was pale, thin, without appetite, and with persistent diarrhœa, no albumen in the urine, consolidation at the apices of the lungs, moist râles, etc. The following month an abscess appeared at the upper and outer part of the thigh. At the commencement of July, aggravation of the symptoms suddenly took place, with sub-acute inflammation of the joint, and strong fever was observed on the 21st. The purulent collection was opened under strict antiseptic precautions. Throughout the month of August the temperature oscillated between 38° and 40° Although the tuberculous condition of the lungs caused a long hesitation, at the urgent request of the family, and in consequence of the daily aggravation of the child's condition from the copious suppuration, Dr. Cazin determined to excise the hip, which was done on August 30. The temperature fell from 40.2° and oscillated between 37° and 38° for a fortnight, when it returned to the normal. The wound, which was scraped at the bottom by Volkmann's spoon, united by first intention, and presented nothing untoward. Six weeks afterward a silicated apparatus was applied and the child began to walk with crutches. Since two months she has quitted the infirmary, her condition becoming better every day, appetite returned, sweats and diarrhœa disappeared

putting on flesh, and the stethoscopic signs considerably improved. On March 1 there was scarcely any appreciable dulness at the right apex, and only at the sub-spinous fossa of the same side can a little crepitation be heard on coughing. The child wears no local apparatus, can walk without crutches, and the limb is only shortened 1½ centimetres.

Her condition at the time of operation was almost hopeless; six months after her general health was as satisfactory as possible. The result, no doubt, depends largely on the strict antiseptic precautions; and in freeing the patient from the constant loss by suppuration, her system was put in a better position to resist the pulmonary lesion—*Le Progrès Méd.*, Aug. 14, 1886.—*Annals of Surgery*, Nov., 1886.

POSOLOGY AND USE OF SOME NEW REMEDIES.—*Osmic acid:* Best administered in pill form (made up with Armenian bole). The dose is $\frac{1}{60}$ grain, which may be repeated several times a day. Used in epilepsy and sciatica. *Agaricine:* Best administered in combination with Dover's powder. Dose $\frac{1}{12}$ to ⅙ grain. Used for night-sweats. *Aloin:* From ⅓ of a grain to 3½ grains, in pill form. *Antipyrine:* Dose from 75 to 90 grains, divided into three portions, one of which is to be taken every hour. *Bismuth salicylate:* Dose from 5 to 7 grains, in pill form. In typhoid this dose may be doubled and repeated every hour, up to ten or twelve times. *Canabinone:* From ⅔ to 1½ grain. Best administered mixed with finely ground roasted coffee. Sedative and hypnotic. *Colocynthin:* Used subcutaneously. The dose is from ⅙ to ½ grain. It may also be administered in pill form, by the mouth, the requisite dose being from ⅓ to 1 grain. *Convallaramine:* Internally, in pill form. The dose is from ¾ to 1¼ grain. *Euonymin:* Best given in pill form, combined with extract of belladonna or hyoscyamus. The dose is from 3 to 10 grains. *Nitroglycerin* is best given in alcoholic solution. The dose is from $\frac{1}{150}$ to $\frac{1}{60}$ grain, repeated several times a day. Rossbach prefers ether as a solvent. His formula for its use is as follows: Dissolve 1½ grain of nitroglycerin in sufficient ether, and add the solution to a mixture consisting of 2 ounces of powdered chocolate and 1 ounce of powdered gum-arabic. Mix very thoroughly and divide into 200 pastilles. Each pastille will thus contain $\frac{1}{333}$ grain of nitroglycerin. Used in angina pectoris, and as a diuretic. *Picrotoxine:* In aqueous solution. Dose from ⅛ to ⅙ grain. Used in epilepsy. *Sulphate of thalline* may be given dissolved in wine or water (with some corrigerant). The dose is from 4 to 8 grains, or 1 grain every hour. The above is taken in part from the *Rundschau Leitmeritz.*—*Medical Record*, Oct. 30, 1886.

NITRO-GLYCERINE.—DR. L. V. HOLST reports in a St. Petersburg journal a number of observations on the action of nitro-glycerine on heart diseases. He considers that it is especially useful where little or no serious organic change in the heart muscle or valves has taken place, and where the affection is mainly due to a debilitated condition of the organ. In angina pectoris Dr. von Holst has found nitro-glycerine very useful; in one case, indeed, it produced a permanent cure. He recommends recourse to this drug instead of to camphor and musk in cases where great cardiac weakness threatens immediate danger to life. He considers that the diuretic action is not due to any direct stimulation of the kidneys, but is a consequence of the regulation of the heart's action. He finds that dropsy, if due to heart weakness diminishes under the use of nitro-glycerine, but that the renal form is uninfluenced by it. With regard to the dose, the author advises that small quantities should be given at first, and increased gradually according to the effect on the particular case. The preparation he uses is a 1 per cent. alcoholic solution, and of this he gives from 1 to 6 drops three times a day.—*Lancet*, Oct. 9, 1886.

ADMINISTRATION OF TINCTURE OF IRON.—*Science* speaks of recent experiments with the common tonic, the tincture of the chloride of iron, diluted with water, showing that when thus diluted it acts very injuriously upon the teeth. This is explained by the fact that the peroxide formed in the alcoholic solution is precipitated, when water is present, in such a flocculent form as not to adhere to the surface of the teeth, and consequently, the free hydrochloric acid can act upon the lime salts of the teeth without let or hindrance. When the tincture is given without water, no action takes place; the peroxide which is then formed is of the anhydrous form, and so compact as to adhere to the teeth, and protect them from the action of the acid. These experiments have resulted in determining that there are three menstrua which can be used as diluents of this tincture, which will produce no injurious effects upon the teeth: they are alcohol in some form, Vichy water, and a simple syrup.—*Boston Med. and Surg. Jour.*, Nov. 11, 1886.

ANTIPYRIN IN RHEUMATISM.—DR. JOLEBIEWSKI, while attached to the military forces in Dresden, has observed the effect of antipyrin in seventy cases of rheumatism. He places its action on an equal with acid salicylic. The action was in general very prompt. The average duration of the disease in the above recorded cases was three to four days. He thinks it best to begin with large doses—60 grains night and morning. This dosage was not strictly adhered to when the patients were very weak and thin, or when there were complications with other diseases—a much smaller amount then being given.

Antipyrin proved as much a specific as salicylic acid in chronic as well as acute cases. There was no case of collapse. In only two of the seventy was there urticaria. The amount of perspiration varied extremely with different individuals. Nausea was quite often observed, especially when taken near meal times.—*Va. Med. Monthly.*—*Medical Age*, Nov. 10. 1886.

A CURE FOR NEURALGIA.—DR. HENRY G. DAVIS gives the following prescription for pure neuralgia:

Tr. cinchon. comp	℥	ij
Tr. nucis vom	ʒ	ss
Morphiæ sulph.	gr.	ij ℿ

S.—ʒj every three hours.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, DECEMBER 4, 1886.

"HOUSE PLANTS AS SANITARY AGENTS."

A very interesting book with this title has recently appeared, from the pen of DR. J. M. ANDERS, of Philadelphia. And we may readily admit with the author, that if it be excusable for a writer to offer a new book on a subject already treated of by many others, we may certainly excuse one who presents a branch of scientific literature which, in the form of a book, has not hitherto found an exponent. In fact, when the subject is well handled, and presented in an interesting manner, as in this book, no apology need be offered by the author for its appearance.

The first duty of a writer on this subject would necessarily be that of dispelling the old, and somewhat popular, superstition that plants in sleeping rooms are particularly unwholesome. The superstition was based upon the knowledge of the respiratory function of plants, which consists in abstracting oxygen from and returning carbonic dioxide to the atmosphere. Of course, if the exercise of this function can have any perceptible effect upon the air breathed the result must be an unwholesome atmosphere. But one has only to study the investigations of Von Pettenkofer to see that all objections on this ground to the cultivation of plants in sleeping rooms are invalid. One of the most powerful arguments to the contrary is the fact that no healthier class of men can be found than green-house workmen, even when they work at night, and sleep in the green-house. Claud Bernard pointed out some remarkable resemblances between the physiological processes of the animal and vegetable kingdoms, and his lectures before the Park Museum of Natural History have had the effect of causing a change of scientific opinion on this subject. This view, first put forward by Mohl, that the respiratory phenomenon of plants takes the same course as in animals, so far from being antagonistic to it, has been confirmed by Coriander, and is now adopted by leading vegetable physiologists. After a series of very careful experiments Von Pettenkofer concluded that the amount of carbonic dioxide in the Winter Garden in Munich could not be reckoned as telling for or against the hygienic value of vegetation in an enclosed space; and that, so far from giving out more carbonic dioxide at night, and thus rendering the air harmful, plants really give out less of this gas than during the daytime. He also found that the amount of oxygen in the Winter Garden was rather higher than in the open air.

The absorption of moisture by plants is a matter concerning which there has been a great deal of dispute; but the most careful experiments tend to show that while plants do absorb moisture, they do so only when circumstances of absorption by the roots are unfavorable; and hence that growing, including potted, plants absorb no aqueous vapor from the atmosphere, when well watered and supplied with proper soil. On the other hand, under favorable conditions of root-moisture and soil, plants actually exhale watery vapor from all green portions. This has been shown by vegetable physiologists, and more recently and exactly by Dr. Anders, in his "Transpiration of Plants." "In clear weather, the evaporation by night as compared to that which takes place in the day appears to be about in the ratio of 1 to 5. In some cases no loss occurred on dewy or cloudy nights. Under ordinary circumstances, transpiration at night was about the same in-doors as in the open air. The true rate of transpiration during the day showed a very different relation, giving a ratio of 2 to 1 in favor of the open air." The average rate of transpiration may be stated as about one ounce and a quarter *per diem*, of twelve hours, for every square foot of leaf surface. Necessarily, the rate of transpiration varies according to the nature of the leaf. Garreau showed that there is a correspondence between the amount of water exhaled by a plant and the number of stomata in its leaves. It is to be further noted, that while heat causes evaporation from dead organic matters, light is the great agent in transpiration in living plants. Transpiration must of course have an effect upon the dew-point; and Dr. Anders found that "the effects of twenty-four square feet of leaf-surface on the air of a room ten feet long, five and a half feet wide, and eight feet high, would be to increase sufficiently the humidity to raise the dew-point six degrees

Fahrenheit—higher than it would be if there were no plants in the room." "We may justly conclude that during the summer months, when the windows are thrown widely open and the doors kept ajar, the influence of transpiration is quite inconsiderable; on the other hand, when the interchange of air is not too rapid, a sufficient number of growing plants, well watered, have the effect (if the air be not already saturated) of increasing the moisture to any desirable extent. Assuming, furthermore, that transpiration is to a much greater extent controlled by the action of the sun's rays than by the temperature range or the relative humidity of the atmosphere, then this process of nature must in clear weather, including the cold season, be more uniformly operated than evaporation from water or other sources under similar conditions."

This is a point of very great interest to the sanitarian. The temperature is affected to some degree by the amount of water in the air; moistening of the air has the effect of lowering the temperature, and thus changes in the degree of saturation cause variations in the temperature. Applying these facts to the air of our dwellings, the advantage of plant moisture would be to secure a more uniform temperature of the air of our rooms. But what is the quantity of moisture essential to good health? At the ordinary temperature of rooms, from 65° to 70° Fah., "the degree of humidity most conducive to health as well as most agreeable to the average individual is about seventy-five per cent. of saturation." But this proportion is, we may say, never found in our dwellings, It must here be remembered that the relative humidity for the same temperature may be very variable. Now, if in an atmosphere of the proper temperature and with the proper degree of humidity the body-evaporation be just what it should be, it is easily seen that much less moisture will increase the rate of exhalation beyond the health limit, the bodily temperature being lowered at the same time. Again, all artificially heated atmospheres contain far too little moisture, and exhibit marked variations; and these two factors cause excessive and variable evaporation. It may be safely said that most of the colds and inflammations of the upper air-passages are produced by improperly moistened, heated, and ventilated rooms. The most significant bearing of the question of plants in rooms is their application to apartments heated by hot-air furnaces. Dr. Anders calculates that half a dozen plants, each with a leaf-surface of six square feet, would be in a room twelve feet long and ten feet wide, with a ceiling about twelve feet high, ample to bring the humidity of a chamber heated by dry air to that of the external air.

Besides the exhalation of moisture plants possess the important hygienic property of generating ozone. This property is possessed by flowering plants in general, and by odorous flowers particularly; foliage plants do not generate ozone, except scented foliage. "It is highly probable that the function demands the influence of the sun's rays, or at least good diffused light. . . . From the facts brought out by the results of scientific research, it is clearly seen that the cultivation of blooming as well as non-blooming plants giving off perfumes in marshy localities and all other places in which the air is greatly polluted by the products of decaying organic material cannot be, on account of the great energy which ozone manifests to destroy these injurious elements, too strongly recommended. It is equally clear and not less important to observe how decidedly beneficial scented foliage and flowering plants must become in the presence of all public gatherings. . . . they would be of special value in the theatre, in the crowded lecture-hall, the church." Again ozone is not detectable in living-rooms, and when it is remembered that plants generate ozone in-doors in clear weather it is easily seen that here is another way in which they may be of sanitary value; though we may not be able to assert, with the author, that the organic exhalations from the skin and lungs of the patient would be attacked and annihilated by the ozone generated by the plants.

From what has been said it is obvious that there is a place in the sick-room for flowers and for flowering plants. Especially in cold weather, when the outer air cannot be admitted so freely, the dry air of the artificially heated rooms may be rendered humid by plants; and the value of a moist atmosphere to many cases of disease need not be more than mentioned. Further than this, the normal and æsthetic influence of plants and flowers must be taken into consideration, as this influence is of very great value. One has only to visit the magnificent *Solarium* of the New York Hospital to see that convalescents value growing plants and sunlight. The æsthetic influence of plants is especially to be seen in certain functional nervous disorders. The observations of Eyseline show that ozone has sedative and hypnotic properties, which still further widens the application of those plants and flowers which generate it. It may be objected and admitted that much of this influence would be the result of "faith" or imagination; but what signifies it whether a patient be cured by medicine or faith, so long as he is cured? Dr. Anders gives some

striking information regarding the influence of plant-cultivation on phthisis and the phthisical diathesis; and it will be remembered that an interesting case was recorded by Dr. Ely McClellan, in the *Philadelphia Medical Times*, February 26, 1881, which confirms the views expressed by Dr. Anders.

THE RATIO OF PHYSICIANS TO POPULATION.

A writer on the *Causes of Low Fees* in the November number of the *Provincial Medical Journal*, England, gives the ratio of medical men to the population in different countries as follows (quoting from *La Gazetta degli Ospitali*) : "France, 2.91 per 10,000; Germany, 3.1 per 10,000; Austria, 3.41 per 10,000; England, 6 per 10,000; Hungary, 6 per 10,000; Italy, 6.10 per 10,000; Switzerland, 7.06 per 10,000; United States, 13.24 per 10,000."

Substantially the same statistical comparisons have been published many times both in this country and in Europe. It will be seen that the ratio of the profession to the population is four times greater in this country than in France, Germany and Austria, and more than twice as great as in Hungary, Italy, Switzerland and Great Britain. Without further explanation, the great apparent excess of physicians in the United States, must cause the inference abroad that the profession here is so overcrowded as to place a large proportion of its members in a state of starvation. And yet it will require but a moderate amount of investigation to show that the members of the medical profession as a whole, in this country, are better paid, and are enjoying more of the substantial comforts of life, than in any one of the countries of Europe. There is doubtless an important error in the comparison of the number of actual members of the profession in this country, with the number in other countries, owing to the different modes of enumeration. The statistics of the profession in this country are derived solely from the general decennial census of the entire population, and depend for correctness entirely upon the verbal statements of individuals to the parties making the enumeration from house to house, and is likely to include all who choose to assume the title of Doctor. The ratio for the United States given above is evidently based on the returns of the census of 1880. On the other hand, in Great Britain, and we think in all the other European countries, the number of medical men taken for the comparison is limited to those legally *registered* after having completed a prescribed course of medical studies and numerous examinations at prescribed intervals, and received a license or degree from a University or Royal College. Thus the ratio of six physicians to ten thousand of the population in Great Britain, is fairly deduced from the 25,998 regularly licensed physicians on the "Register" for 1886, and 36,000,000 as the total population of the British Islands. This excludes all irregular and "unregistered" persons who are actually engaged in practice, especially for the poorer classes, and of whom there are many thousand distributed throughout all parts of the Kingdom. By the laboring classes they are employed at low fees, and are freely called "Doctors." While passing a short time in England during the past summer we were assured by some of the best informed men in the profession there, that the number of apothecaries, chemists, and other irregular, unregistered parties engaged more or less in prescribing for the sick in their country was not less than 15,000 or 20,000. Their statements are strongly corroborated not only by the articles concerning the causes of low fees in the recent number of the *Provincial Journal*, but by the frequent references to the number of illegal practitioners in both the London *Lancet* and the *British Medical Journal*, by writers discussing the election of new members of the General Medical Council, etc.

Another circumstance exerting an important influence on the relations of the profession to the population, is the fact that in Great Britain, and indeed throughout the countries of Europe, a much greater proportion of the population belong to the class of indigents who pay no doctor's fees. The aggregate number provided for in the workhouses, infirmaries, hospitals, etc., supported by the Governments, is very great, while in this country the number similarly situated is relatively small. If the number of medical practitioners in each country was compared only with the population capable of paying some fees for medical services, the difference between the ratio in this and other countries would be far less.

SUICIDAL MANIA IN TYPHOID.

The occurrence of suicidal tendencies in the occasional mania of the early stage of typhoid fever is rare, and it may be interesting to know that it was present in the case of the celebrated jockey, the late Frederick Archer. Mr. J. R. Wright, his medical attendant, states that when he was first taken ill it was hoped that the illness was only temporary, and due to a chill; but two days afterwards the enteric condition was recognized, and from his previous exposures and privations there was a prospect of a long and severe attack. There was at first great mental

depression and very high fever, says the *British Medical Journal*, but, under the careful treatment and watching he received, material improvement took place, and the case seemed to be going on better than could have been hoped, when, on November 8, he was seized with one of those suicidal influences which are occasionally noted during the first week or ten days of typhoid fever. This disease is so associated in the minds, not only of the public but of the medical profession, with prostration and low muttering delirium, that the fact that acute delirium with delusions, generally of a suicidal character, sometimes comes on during the early stage, will be new to many. The delirium, indeed, may be so violent as to be mistaken for acute mania, and consultations have even been held, in some cases, to decide whether the patient should be committed to a lunatic asylum. M. Mottet has related a case where this mistake was actually made, and the patient admitted to the lunatic asylum before the true nature of his malady was recognized. Only one consolation can be offered to Mr. Archer's many friends and admirers, and that is, that these maniacal symptoms are of extremely grave moment, and that the majority of patients who present these symptoms succumb to the disease. It is improbable that, under the circumstances, the termination of the case could have been favorable.

CARE IN REPORTING CASES.—A correspondent, alluding to some cases recently published in THE JOURNAL, makes the following important suggestion:

"Articles produced in medical journals are very potent either for good or evil, especially in cases of emergency. Professional men should bear this fact in mind, and confine themselves to true statements in the description, treatment and result of cases. Whether from a desire to draw comments from others, experienced, thereby receiving valuable instructions, or from a thirst for notoriety by striking awe into the readers with the details of some wonderfully complicated case, the bold and original treatment and happy results, I know not; be that as it may, cases are frequently overdrawn and misrepresented with dire effects."

SURGEON-GENERAL OF THE U. S. ARMY.—LIEUTENANT-COLONEL JOHN MOORE, until recently Assistant Medical Purveyor, has been appointed by the President, Surgeon-General of the U. S. Army in place of Brigadier-General Robert Murray, retired on account of age. The new appointee is a native of Indiana, entered the Medical Corps in 1853, and is consequently one of the oldest in the service. He has been constantly in active service and has made an honorable record for faithfulness and ability throughout. and brings to his new position all the experience, ability, and high character that the office requires.

DIED, November 20, 1886, DR. JOSEPH A. LANDIS, at his residence in Hollidaysburg, Pa., in the 82d year of his age. He was a physician of high standing, and greatly respected by all classes of the community. One of the founders of the Medical Society of the county in which he lived, he was also a member of the State Society and of the American Medical Association.

DIED, November 30, 1886, DR. JOHN P. GRAY, of Utica, N. Y., for many years Superintendent of the New York State Asylum for the Insane, and one of the most eminent of the alienists of our country. A more extended notice will appear hereafter.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 20, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

H. M. CUTTS, M.D., SECRETARY.

DR. F. C. FERNALD read a paper entitled

EMPYEMA IN AN ADULT—PLEUROTOMY—RECOVERY IN THIRTY-FIVE DAYS.

(See page 619.) He also exhibited the *Cabot dressing* as used in the case.

DR. A. F. A. KING complimented Dr. Fernald on his paper and the success of his operation. He thought pleurotomies were not very common in Washington. He mentioned a case in which Dr. J. F. Thompson had aspirated for chronic pleurisy ten years ago. The patient but recently died of tuberculosis. On another occasion he was with the late Dr. Ashford when he failed in two attempts to find pus, on aspiration, in a liver. The patient had chronic dyspnœa and the constitutional symptoms of suppuration. Dr. Ashford, however, did not agree with Dr. King that there was an hepatic abscess. The patient died suddenly with great dyspnœa, which he thought was due to rupture of hepatic abscess into the pleural cavity. He thought that the pus in Dr. Fernald's case was also from an hepatic abscess.

DR. A. Y. P. GARNETT had had a case similar to Dr. Fernald's. It was one of empyema without any previ-

ous serous effusion. The patient was supposed by his attendant in the country to have phthisis, as there was emaciation, hectic, and expectoration of purulent matter. The right side he found filled with pus, as shown by exploratory aspiration. Assisted by Drs. Acker and Hagner, he had done thoracentesis with a large trocar, and then inserted a long drainage-tube. Thirty to forty ounces of pus came away. He thought pleurotomy more dangerous than this proceeding. No antiseptic precautions had been taken, because he did not much believe in their necessity. A silk string was passed through the tube, and this was caught with adhesive plaster. A sponge caught the discharge. The cavity he had washed out, and on first occasion it took two pints of fluid to fill it. Three days afterwards he could only get in one and one-half pints, and in two weeks only two and one-half ounces. The patient made a rapid and complete recovery and is now a farmer. This result is contradictory to Dr. Fernald's views, as he lays much stress on the use of the antiseptic dressing.

Dr. R. Reyburn had had a boy of 9 years with empyema of right side. He had aspirated and removed fourteen ounces of pus. This did not stop the hectic, which reached 103° to 104.5°. The irritation still remaining in the cavity, it refilled. He did thoracentesis with trocar and inserted a drainage-tube, retained in place as Dr. Garnett's had been. Sixteen ounces of putrid material came away. He injected iodine water of the strength of 20 drops of tr. iodine to 8 ounces of water. The boy made a rapid and complete recovery without a bad symptom. This he considered due to the removal of the putrid material. He had used no antiseptics. He would just as soon now open an empyema as a common abscess.

Dr. A. F. A. King asked Dr. Fernald if the œdema of the chest walls present or a thickened pleura had made it necessary to go one and one-half inches before obtaining fluid?

Dr. Garnett said he had intended before to ask Dr. Fernald why he had chosen pleurotomy instead thoracentesis? In his opinion, pleurotomy was admirable in a fibro serous effusion where there were clots which would not come through a trocar. This was not a chronic lesion which is shown by definite physical signs, such as alternate areas of amphoric resonance and flatness on percussion, etc., but a simple cavity filled with pus. Pleurotomy is usually considered a much more dangerous and complex operation than thoracentesis.

Dr. J. F. Hartigan said that the case was probably one of so-called "latent empyema" due to some dyscrasia; as, for instance, previous history of liver abscess in this case. Pleurotomy with an incision one to two inches long he thought was always the proper operation for this condition. In the East London Children's Hospital he had seen Mr. Parker do this operation several times. Here they use two large calibre tubes one inch long with a T-piece across them. The opening is made under spray and then covered with antiseptic gauze, which is renewed in forty-eight hours. In two weeks the patient is practically well. He had often made post-mortem examinations on patients upon whom the trocar had been used or where there had been no surgical interference, but never where pleurotomy had been done.

Dr. F. C. Fernald, replying to Dr. Garnett, said that there were no means of knowing the exact nature of the pleural contents until an opening had been made. He thought that a long tube left in the cavity of the pleura delayed cure by keeping up suppuration; moreover, he did not consider pleurotomy at the present day dangerous. To Dr. Reyburn he would say that in this case the pus was not putrid. Dr. Reyburn's patient was a boy at an age when there is an intrinsic tendency to get well. His case was in an adult and a colored man, which race, he understood, were peculiarly liable to a fatal result from such lesions. He thought that Dr. Reyburn had used antiseptics when he used iodine water. It was probable that both the œdema on the outside and a thickened pleura prevented his getting pus before he had shoved the aspirating needle one and one-half inches. He thought that while there may be but a little better percentage of recoveries by the Cabot method of dressing, which he had used and just described, there was no method which produced such quick recoveries.

Meeting of October 27, 1886.

The President in the Chair.

Dr. John B. Hamilton reported a case of

TUMOR OF THE ANTRUM, COMPLICATED WITH NASAL POLYPI,

and exhibited the specimen. The patient, W. J. Storms, aged 54, born in Pennsylvania, occupation carpenter, was admitted to the Providence Hospital on May 19, 1886, and was operated upon on the 23d. The tumor completely filled the antrum, and encroached on the orbit and the nasal cavity. There were two polypi springing from the inferior turbinated bone, the right nasal cavity was filled, and the cheek was markedly deformed. The eye projected out of its socket. The tumor had been of slow growth, and entirely painless.

The operation was performed under ether. A curvilinear incision following the curve of the orbit was made at its edge, and met by a similar incision extending vertically alongside of the nose, the flap was reflected and the antrum opened, and the tumor scooped out with the sharp spoon. To my astonishment, no bony wall required removal, for on raising the flap the cavity of the antrum was opened with it; the bone being attenuated anteriorly so as to constitute the thinnest kind of shell. There was then a large opening extending entirely through the superior maxillary bone, and the finger was passed directly into the fauces. Care was taken to scrape out carefully the cavity. Prior to the commencement of the incisions, the polypi were twisted off with stout forceps.

After the operation a carbolized sponge was inserted into the cavity and the flaps closed, a bandage being applied so as to make slight compression. There was no subsequent hæmorrhage. The sponge

was removed on the next day and the flaps carefully adjusted. The wound healed without difficulty, and the patient was discharged recovered June 21, 1886.

DR. I. BERMANN said that tumors of the antrum rarely reached the size of the one exhibited, as they are usually removed when small. He thought that the tumor was a sarcoma, as this is the usual degeneration of such growths.

DR. HAMILTON said that the specimen had been in alcohol since last June, and had changed its external appearance considerably. Nasal polypi usually develop in a capsule. This was an excrescence, and had pushed forward, completely filling the antrum, even pushing the eye out of its socket. The scooping out process had also changed its macroscopical appearance. In a list of nearly 500 tumors of the antrum which he had recently seen, over 50 per cent. were carcinomatous. Sarcomata were, however, very common. There had been no return of this so far as he had learned.

DR. J. F. HARTIGAN said that at present the tumor looked like inspissated mucus.

DR. BERMANN said that when the so-called mucous polypus was punctured there comes out a thick fluid and the tumor flattens so that its appearance is greatly changed. The embryonic cells, when tumor is of slow growth, gradually transform into more solid tissue, and become fibrous with round cells, altogether unlike the original polypus. He thought that this was the case with the exhibit.

DR. HAMILTON said that it was true that mucous polypi vary with age. They are, however, practically cystic in structure, and are classed with the adenomata. When malignant they are myxomatous, or round celled sarcoma—rarely anything else. He had not examined the tumor microscopically.

The Committee on Microscopy reported that the nasal polypi were mucous, and the tumor of the antrum carcinomatous.

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

Third Annual Meeting, October 12, 1886.

DR. F. C. HOTZ IN THE CHAIR.

BOERNE BETTMAN, M.D., SECRETARY.

The following were elected

OFFICERS FOR THE ENSUING TERM.

President—Dr. E. Holmes.
Vice-President—Dr. Lyman Ware.
Secretary and Treasurer—Dr. Boerne Bettmann.

DR. F. C. HOTZ read a paper entitled

THE RATIONAL TREATMENT OF PATIENTS AFTER CATARACT OPERATIONS.

Though the safety of the eye is of prime importance, we must, in our anxiety for the recovery of this organ, not entirely disregard the comfort of the patient; for we have no right to deprive our patients of any comfort which does not disturb the healing process. The usual treatment after cataract operations is anything but pleasant to the patient, and many dread the confinement to bed and dark room worse than the operation itself. If it can be shown that such measures are superfluous, they should be abandoned.

When a wound is carefully cleansed and disinfected, and its edges are nicely approximated, it will heal by first union, provided the close adaptation of its edges is not disturbed by external violence or by muscular tractions. Rest of the wounded part is the first condition for kind healing. But to rest the eye-ball it is not necessary to put the patient to bed; we can secure the necessary rest for the operated eye, *i. e.*, we suspend the functions of the ocular muscles and immobilize the eyelids, by bandaging *both* eyes. As long as they are closed they remain comparatively motionless. The bandage over both eyes accomplishes this result just as well whether the patient is in bed or sitting in a chair. The confinement to bed, therefore, is irrational; and the recumbent posture is not only of no advantage, but may even disturb the flow of blood to the head; consequently congestion of the ocular tissues is more likely to occur in the recumbent posture than when the patient is sitting up.

The uselessness of darkening the room will be apparent to every one who will bandage his own eyes just in the same manner as we dress the eyes after cataract operations. The bandage shuts off the light so thoroughly that he will be unable to tell whether the room is light or dark. To the patient it is immaterial; but to his attendant it is a great comfort to have light in the room.

In regard to the dressing there is a difference of opinion, the majority of oculists employing the pads and bandage; some closing the eyelids only by strips of plaster, and others discarding all dressings.

If we dispense with the dark room we can not leave the eyes without dressing, because the winking of the eyelids and the constant relations of the eye-ball would disturb the wound and cause a good deal of irritation. The plaster strips overcome this difficulty, but they do not give the eye any protection against mechanical insults which might cause a re-opening of the freshly united wound. The bandage with padding of absorbent cotton, or any other soft material, secures to the eye rest and protection against accidents, and is therefore to be recommended as the most rational dressing. The flannel roller is open to the objection of being easily disarranged by the movements of the head on the pillow; but a roller of mosquito netting or Swiss gauze, applied wet, forms, when dry, an immobile bandage which does not become loose, and keeps nicely adjusted for any desired length of time.

The sensitiveness of the operated eye to bright light is not due to the bandage; it varies greatly in different persons; some even do not show it at all. When it exists, it only shows that the eye has not completely recovered from the effects of the operation, though the external wound may appear well healed. With the eyes well bandaged my patients are sitting in easy or rocking chairs, in light rooms,

and are even allowed to take an exercising walk in their rooms; they go to bed when they please and get up whenever they like. I have never observed any complication of accident which could directly or indirectly be attributed to this mode of treatment. The recovery was as rapid and the results as good as under the old fashioned régime.

SUFFOLK DISTRICT MEDICAL SOCIETY.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

Stated Meeting, October 13, 1886.

DR. V. Y. BOWDITCH IN THE CHAIR.

ALBERT N. BLODGETT, M.D., SECRETARY.

PROF. T. W. SEDGWICK read a paper on

THE FILTRATION OF POTABLE WATERS, WITH REFERENCE TO THE ELIMINATION OF ORGANIC GERMS.

Drinking water is seldom or never free from organic matter. A good quality of deep-well water is probably as free as any other from it, and yet Frankland, by the method of biological examination (gelatine plate-cultures), found rarely more than ten microbes in one cubic centimetre of such water. The same quantity of water taken from the Thames at Hampton contained about one thousand microbes. We shall probably not be far wrong in supposing the same to be true of drinking waters generally. All contain more or less of organic matter, if not when first taken from the well or spring, certainly before they enter the mouth. Some of this matter is living, in the shape of bacteria, infusoria, diatoms, etc., and some is lifeless, being either dissolved or suspended. The entire quantity, however, in what is ordinarily called wholesome drinking water—namely, that from springs, wells, rivers, etc.—is a very small percentage of the total volume of liquid. These waters are by no means necessarily to be condemned on that account, but are still to be regarded as perfectly wholesome.

There is, nevertheless, a *possibility* of danger in this organic matter, and hence the water supply of a community must always be closely watched, and, if necessary, rarely, in times of epidemics, perhaps even abandoned altogether for a while. But this possibility, once recognized and constantly kept in mind, need not cause great anxiety.

We cannot easily get rid of all the organic matters in drinking water, nor is this necessary, except from a theoretical point of view. Most of the microbes present are perfectly harmless, and if all were removed, there would still be abundant opportunities for introducing them into the body through other channels.

There are, however, two ways in which organic matters in drinking waters may be rendered harmless: 1, by removal (filtration); 2, by killing (heat). The latter is an easy, but not a sure method, since the spores of some microbes endure even prolonged boiling. Boiling is, however, a useful, simple, and inexpensive, though rough and imperfect method of protection. Filtration, formerly a mere straining, has, of late, aspired to *sterilize*, that is, to remove from the water all its living substances, however infinitesimal. In this event the filtrate must be perfectly safe for drinking purposes, even the *possibility* of danger having been removed. Most filters do not claim such perfection, and most which do, fail to reach it. The "Chamberland" filter is said to sterilize, and the micro-membrane filter invented by Breyer, of Munich, is claimed to do the same. [The speaker then exhibited a micro-membrane filtering apparatus imported by Prof. Nichols. An ultra-marine mixture (in water), a fluid which filters with great difficulty, was shown to be perfectly separated by the apparatus.] The essential part of this is a filtering surface of finely divided asbestos. This is made by grinding the mineral in water, then mixing it with crystallized carbonate of calcium, grinding again thoroughly, and adding hydrochloric acid. The sharp edges of the crystallized carbonate seem to penetrate the asbestos, splitting it up—a process which is carried further by the escaping bubbles of carbon dioxide. In this way, fibres of extraordinary fineness are obtained, and, by other steps, made into filtering sheets or "lamels," which are easily arranged for filtration. Prof. Nichols had made some experiments with the filter, but was not convinced that it would sterilize, although he granted its great perfection.

He closed by affirming his full agreement with Prof. Nichols in the following statements taken from a paper by the latter, upon the micro-membrane filter, read before the Society of Arts in April, 1886: "Personally, I am quite content with the efficacy of the filter, and I think, in its larger forms, with attached reservoir, it may serve a good purpose. Of course in this country, these small filters, which take an hour to filter a quart of water, would be quite useless. No one will wait fifteen minutes for a glass of water to filter through; he would rather take his chances for a few more microbes. I do not lay so very much stress upon this matter of "germs" in the present connection. First, because there is no proof that the number of microbes bears any direct relation to the wholesomeness of the water; second, because a water furnished or used for domestic supply ought not to contain *dangerous* organisms requiring removal; third, because, even if it were possible to obtain a germ-free water by carefully sterilizing the whole apparatus, and receiving the filtered water in sterilized vessels, such water would not be obtained in the ordinary use of the apparatus."

DR. S. W. ABBOT, of the Massachusetts State Board of Health, said: There are two things to be borne in mind in the study of filtration of water; one relates to the well-being of the consumer, and is of use only as it modifies the actual condition of the water; while the other relates to the financial success of the company manufacturing the filter. Filters as now made are all more or less defective, and accomplish the objects for which they are manufactured with more or less completeness. If we could have a filter which would adequately protect the consumer of the

water against the contamination which may, and too frequently does, exist in drinking water, we should have a good thing. A filter is a thing which is the subject of many erroneous ideas on the part of the public. All filters containing charcoal, silica, etc., will remove a certain amount of dirt from the water, and the popular idea seems to be that thereby they actually protect the public from the effects of contaminated water. This is a positive mistake, but many people are firmly persuaded that filtration transforms an injurious water-supply to a wholesome one. We cannot put reliance upon any appliance for the mechanical purification of drinking water until it is proved to do more than any filter is now doing. In regard to the micro-membrane filter, it must be remembered that this is a new instrument, and it might not do so good work after a certain period of use as it now does. If it could be enlarged, it would seem to offer the promise of a really good and serviceable filter. It looks as if it might exclude bacteria. If any form of filter could be devised which might be applied to the water at its source of supply, instead of at the end of the service, it would be a vast improvement over any present system.

DR. J. G. BLAKE said that the subject of filters is a broad one, and much misapprehension doubtless exists upon their design and usefulness. A filter is no more than a strainer, and will do the mechanical work of a more or less perfect strainer, and that is about all it will do. The ordinary filter is much too small for useful service, and can do only imperfectly the duty of separating the extraneous matters in water, as is usually seen in the action of most filters. The amount of filtering material is ordinarily far too small to properly strain out the foreign substances or to furnish even an approximately pure water. If the micro-membrane filter can be made practicable and constructed cheaply it would seem to be a good thing.

MR. DESMOND FITZGERALD, of the Cochituate Water Board, said that the whole question of the filtration of water will resolve itself into two propositions. First, does it pay? Second, can the various impurities in water be removed by this means? Can filtration remove the color from impure water? Can it abstract the albumenoid ammonia and other chemical contaminations? Until a filter can be produced which shall answer these demands, this appliance will not come into general use. With respect to the micro-membrane filter, the question to be asked is, will it clog? will it remove chlorine? will it still continue to remove these impurities after a period more or less long of active service? At present all forms of domestic filters are simply strainers. We have not arrived at perfection in the manner of distribution of water-supply, and are farther still from the practicable and reliable means of its purification. Filtration to be most effective should be conducted in such a manner that the water may pass slowly through the filtering medium, and thus allow the detention of deleterious matters. Rapid filtration is not in accordance with the principles of perfect separation of impurities,

In answer to Dr. Blake, Mr. Fitzgerald said that the cost of filtration of water on a large scale would not probably be so large as to interfere with its practicability, if a useful method could be devised.

PROF. GEO. F. SWAIN, of the Massachusetts Institute of Technology, said: It is not necessary to remove all the germs from the drinking water, even if this were possible. The place for the removal of organic matter is not at the delivery of the water in the house of the consumer, but it is at the source. The dirt in the state of mechanical suspension can be removed by a simple filter at the point where the water is drawn for use. In regard to filtration on a large scale, it is simply straining, and not filtration in any proper sense of the word. Prof. Swain then described the Diamond Filter, for the purification of water for domestic purposes, as follows: This filter is intended to be attached directly to the supply-pipe, taking the place of a faucet, and it consists of a cast-iron enamelled cylinder, to which a top is screwed, the water entering at the bottom and passing out at the top. The filtering material consists of two layers of quartz sand with an intermediate layer of bone charcoal, closely packed between two brass gratings, to which are soldered screens of fine brass wire. The area of cross-section of the filter being very much larger than that of the inlet pipe, the velocity of the water through the filtering medium is very much reduced, and the coarser particles settle below the lower grating or are caught on the wire screen, while the finer ones are intercepted by the lower layer of quartz, very little even reaching the charcoal, which therefore needs renewal but seldom.

The principal peculiarity of the filter lies in the method of cleansing. It is divided internally by a vertical solid partition, and at the inlet a four-way cock is placed. The two upper openings are inlets, and the two lower ones outlets, leading to the discharge-pipe just below the inlet; the inlet and outlet on the right being connected with the right-hand half, and those on the left with the left-hand half of the filter. In ordinary working both inlets are open and both outlets closed, the water entering on both sides and ascending through the whole body of the filter; but if the filter is to be cleansed the outlet valve or cock is closed, and the far-away cock is turned so that the left-hand (upper) inlet, and the right-hand (lower) outlet are closed, the water passing in at the right, up through the right-hand half, down through the left-hand half, and out through the outlet, thus cleansing the left-hand half with *filtered water*, a point upon which the inventor lays great stress. By turning the four-way cock so that the right-hand inlet and left-hand outlet are closed, the course of the water may be reversed, and the right-hand compartment cleansed. Finally, if the water contains such finely divided particles as to be but imperfectly filtered in the ordinary manner, the usual outlet valve may be closed and the water drawn from the lower discharge, after having been made to pass up and down through the filter. The filtering material is renewed by unscrewing and removing the top. The ordinary sizes of this filter, which is made by John G. Avery, in Spencer, Mass., are: No. 1, 4 in. diam., 6 in. high, 4 in. of filtering material, price

$10; No. 2, 6 in. diam., 8 in high, 6 in. of filtering material, price $15; No. 3, 12 in. diam., 15 in. high, 11 in. of filtering material, price $35. Very much larger sizes, however, have been made in special cases.

Dr. Henry J. Barnes spoke at some length of the desirability of securing the utmost degree of cleanliness in the fluid we use as a drink, and continued as follows: The desirability of filtering the water-supply of Boston has been greatly diminished, through the influence of the members of this and the parent Medical Society, exercised chiefly through the valuable services of Dr. John G. Blake, a member of "The Commission of Investigation," since which the storage basins on the Sudbury River have been relieved of a large amount of vegetable mould, the decay and disintegration of which loaded the water with a great volume of organic matter. There has been little to complain of in the character of this water. At the present time these storage reservoirs are practically in the condition of "natural ponds," polluted to a greater or less extent by organic matter both animal and vegetable, dead and alive, washed into the basins with every rainstorm of magnitude, beside no inconsiderable amount of sewage which the praiseworthy efforts of the Water Board and engineer have failed to exclude. Nature strives, and in a manner succeeds, in neutralizing this baneful influence by inhabiting the water with living organisms which devour the dead, prey upon the living, and transform organic into inorganic matter. Insects, fishes, mollusks, crustaceans, diatoms, and other species of animalcules, each and all contribute to this end. And it is therefore undesirable, even if possible, to defertilize it at this point.

The bacteria of putrefaction, consuming oxygen, convert nitrogenous matter into plant-food. Vegetation inhaling carbonic acid and exhaling oxygen, renders it possible for animal life to exist. The algæ selecting food from elements set free by decomposition, the spongella subsisting upon animalcules and the spores of the algæ, are but steps which, if properly balanced, contribute towards purification. The balancing of these organisms, the ideal condition of a water-supply, is not to be hoped for where so many factors interfere with harmony. Unconsumed animal and vegetable material, with the coagula of imperfectly decomposed soluble matter, finds its way into the service pipes, for which we have no means of elimination except by filtration. It is here shown by the working of these filters to be considerable, and I do not believe its consumption conducive to the best hygiene. Nature strains it all out in converting surface into spring water. If we can imitate her by artificial devices it is certainly desirable, and it does seem as if many of these machines do excellent service in this direction. While advocating their use, then, for the Sudbury and Cochituate service, I should deprecate the establishment of the notion that any are capable of freeing water from those noxious elements which go to make up six-sevenths of the pollution where sewage is discharged. The dissolved nitrogenous matter in urine, the almost completely soluble fæcal discharge, must of necessity pass through any mechanical obstruction the mesh of which is capable of transmitting the liquid vehicle. For this reason, water contaminated as in our Mystic supply, with human excreta, washings from tanneries, currying shops, glue-factories, piggeries, etc., cannot be materially benefited by any of these appliances. By chemical treatment, a portion of the soluble matter can be precipitated, but of the great variety of methods employed, but few produce an effluent from sewage which should be discharged even into water not used for domestic purposes. One of the simplest and best plans for this purpose is employed at Stroud, England, and known as the "Bird Process." Impure sulphate of alumina and sulphuric acid are the agents. The acid is added to powdered clay a few days before it is used, from a hopper regulating the discharge, into a current of sewage which goes to the first reservoir of deposit. From this receptacle it runs under another hopper discharging clay mixed with sulphuric acid to a second reservoir, and from thence over three lays of filtering coke. Analysis of the influent and effluent water shows in parts per 100,000 in weight, the water before treatment to contain 53.5 soluble and insoluble matter; after, 48.5.

	Before.	After.
Organic carbon	2.289	2.203
Nitrogenous matter	2.859	1.779
Ammonia	6.000	5.000
Nitrogenous matter in combination	7.800	5.887
Matter in suspension, mineral and organic	43.000	4.008

This result, though obviously good, cannot be considered satisfactory epuration for domestic purposes. Clay will promote decomposition of nitrogenous matter when brought in contact with the lime it contains, and the alum will cause a precipitation. But this has proved an unsatisfactory method in the treatment of sewage at Tottenham, although complete clarification was secured before discharging in the river Lea. A floculent deposit collected on the bed of the river of highly putrescible character.

It is obviously impossible to treat potable water with clay even if a more satisfactory result could be attained. The more complicated methods of chemical treatment, such as Hille's, Goodall's, Holden's, Campbell's, and Scott's processes, the A. B. C. process of Sillar, the lime and chloride of iron treatment, afford little assurance of successful epuration, and many of the agents employed would be objectionable in a water-supply. Dr. Frankland wrote a few years ago: "The actual resources of chemistry do not permit the hope that the dissolved impurities in sewage can be precipitated by any appliance of chemical reaction, and unless new chemical laws are discovered, it is useless to attempt the employment of this agency."

Soil purification, though capable of transforming sewage into potable water, opens up a subject beyond the limits set for consideration this evening, and it is not applicable to the purification of water in open sewage basins, except so far as filter galleries will eliminate a certain amount of material in suspension.

Dr. Harold C. Ernst said that he desired to protest against the view apparently advanced by Prof. Sedgwick, that the indiscriminate and unhin-

dered swallowing of bacteria in any and all forms is harmless, not to say wholesome. No person who has ever witnessed the results of the ingestion of the germs of cholera, either in the way of an epidemical outbreak of that disease, or as a means of research in experimental pathology, could entertain such an idea for a moment. The sterilization of water by filtration has been tried in a very thorough manner in the laboratory of Prof. Koch in Berlin. Many different kinds of filters were employed, and the resulting filtrate was tested as to its freedom from germs by means of culture-plates. None of the common forms of filter were found to be bacteria-proof. Only one was found which was capable of arresting the germ contents of water. This was the filter devised by Chambourland, in Prof. Pasteur's laboratory. In most of the filters it was observed that the germs grew rapidly in the filter, and soon penetrated the wall of the filter by direct growth from the other side, and thus appeared in the filtrate in large numbers.

PROF. SEDGWICK stated that he by no means wished to be understood as believing that it was safe or prudent to employ polluted water for domestic purposes. He said that there was no doubt, on the other hand, that a vast number of germs were taken into the human organism every day, and there is usually no serious result from their ingestion. Of course there are microscopic germs, which are harmful or even destructive to the animal body, and these can never be taken except on peril of great disturbance to the functions of the body, but there are also a vast number of germs which may be and are taken into the body without perceptible detriment.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

New York State Medical Association — Pulmonary Tuberculosis—Puerperal Eclampsia—Officers.

The discussion on "Pulmonary Tuberculosis" on the second day of the meeting of the New York State Medical Association, was of very great interest. It was opened by Dr. Henry D. Didama, of Syracuse, who in his usual attractive style gave an exposition of his well-known views in regard to the causes, prevention and treatment of the disease. The first division of the subject considered was its etiological factors. The *inherited* were discussed by Dr. John Cronyn, of Buffalo, the *acquired* (micro-organisms) by Dr. Herman M. Biggs, of New York, and the *predisposing* by Dr. Henry L. Elsner, of Syracuse. One of the questions handled by the latter was: Is there not satisfactory evidence that some cases of pulmonary consumption are non-tubercular at the start, and that other cases remain free from tubercles throughout their course? and the speaker expressed his positive conviction that there is such a thing as non-tubercular consumption.

The second division was the matter of prophylaxis, and this was discussed by Dr. Wm. H. Flint, of New York. He spoke of the necessity of removing the children of tuberculous parents from their homes during the period of infancy, and longer in certain cases, and of preventing the association of individuals with cellular impairment with the subjects of tuberculosis. He also advocated the regular disinfection of the sputa and dejections of tuberculous patients. One of the subjects discussed by him was: How can the medical profession most widely diffuse and inculcate the important truth that consumption in children is often the result of parental faults and vices? and he thought that this could only be done by conscientious individual efforts by the members of the profession. The third division, treatment, was discussed by Dr. John Shrady, who in the course of his remarks gave an interesting *résumé* of what had up to the present time been accomplished in the way of local antiseptic therapeusis, including some important experiments lately made by Dr. L. J. McNamara, of the Carnegie Laboratory, which have not as yet been published. While not expressing a positive opinion as to the value of such measures, it seemed to him probable that further investigations would establish their utility, in conjunction with the constitutional and hygienic treatment now generally recognized as appropriate in pulmonary consumption.

On the third day of the meeting there was a general discussion on "Puerperal Eclampsia," and it was opened by Dr. Wm. T Lusk, of New York, in a paper eminently worthy of his reputation. Dr. James Tyson, of Philadelphia, who, like the gentlemen from a distance who took part in the discussion on laparotomy, came on by special invitation for the purpose of lending additional interest to the proceedings, discussed, in his learned and forcible manner, the connection between uræmia and the eclamptic attack. The questions, Should labor be induced in case of the occurrence of eclampsia during pregnancy? and under what circumstances, in case of threatened eclampsia, shall premature labor be induced as a prophylactic measure? were discussed by Drs. Isaac E. Taylor and T. Gaillard Thomas, of New York.

Dr. Thomas said he thought that the following points would be accepted, as resting even now upon a substantial and enduring basis: 1. That as we have a form of renal disease entitled desquamative nephritis, due to certain causes about which pathologists are pretty well agreed, and another entitled scarlatinous nephritis, due to the blood poisoning of scarlet fever; so have we still a third which should be entitled puerperal nephritis, which commonly attends upon and is undoubtedly due to the condition of utero-gestation. 2. That puerperal nephritis is the great, if not the sole, cause of puerperal eclampsia. 3. That puerperal nephritis accomplishes this result by leaving the blood surcharged with certain noxious elements which the crippled condition of the kidneys causes them to fail to eliminate. 4. That while we are ignorant of the method by which the puerperium induces this form of nephritis, we have abundant evidence of the fact that so soon as utero gestation ceases to progress, the renal trouble, as a rule, diminishes, and soon disappears.

Dr. Thomas said that in all his extended experience he has seen but two cases in which puerperal convulsions were unattended by the unquestionable evidences of renal disease. In both these cases, after the immediate eclamptic seizures had disappeared, albumen in large amount was found present in the urine. He related an interesting case illustrating the point of the disappearance of the renal trouble as soon as pregnancy ceases to progress. He unhesitatingly and in the strongest possible manner advised the induction of premature labor in eclampsia occurring at the sixth, seventh or eighth month of pregnancy, as he had found by long experience that any other course was attended with great danger and was in every way unsatisfactory. He explained, however, that he did not by any means maintain that when a patient is rigid with puerperal convulsions labor should always be immediately brought on. In many cases in which the seizures yielded to appropriate remedies it was wise not immediately to excite the nervous system by the establishment of parturition; but to wait for two, three or four days, until the morbid chain was broken which had registered itself upon the nervous system. It was not such judicious delay as this that he was opposed to; but to that delay which for weeks and months exposed the patient to a reëstablishment of all the morbid elements necessary to eclampsia, to the development of which she had already shown herself prone. Under these circumstances parents who were anxious for offspring would often oppose the establishment of premature labor, under the idea that delay would secure for the child a greater chance of life. If the process of gestation had advanced beyond the seventh month, so far from this being the case, the chances of life for the child were much enhanced by interference.

There were three circumstances, and three alone, he went on to say, which would prompt a different line of action from that which he had advocated: 1, the fact that the convulsions were due to some direct and certainly ascertainable irritant influence susceptible of removal by emesis, catharsis, or some similar method; 2, that they were of purely hysterical character, or partook of the form of true epilepsy, to which the patient had long been subject. Under these circumstances the seizures would depend upon no condition which was likely to prove cumulative from the prolongation of utero-gestation. Besides this, it was to be borne in mind that these seizures would not come into the category which was now being considered. 3. If it should be ascertained that the child had lost its life during the existence of maternal convulsions, and the seizures were controlled by treatment, he should, from his own experience, be willing to leave the case to nature, confident that the ending of the progress of gestation would remove all danger for the future, even although a dead child with its secundines still occupied the uterine cavity.

In answer to the query, Under what circumstances, in case of threatened eclampsia, should premature labor be induced as a prophylactic measure? he said: 1. Every obstetrician mindful of his duty will invariably, after the third month of pregnancy, examine the urine up to the full term, at least as often as every ten or fourteen days. 2. If evidences of puerperal nephritis demonstrate their existence before the end of the seventh month, the period of fœtal viability, every effort should be made by daily warm baths, the milk diet, laxatives, and the nightly use of the bromides, to "tide the case over" until that period has been reached. 3. If the amount of albumen, tube-casts and epithelium be plentiful in the urine; if the secretion of urine be scanty; the patient complain of headache, dimness of vision, and decided gastric disturbances, and all these symptoms did not at once diminish under the prophylactic measures already mentioned, we should not hesitate to bring on premature delivery at once. 4. Should the patient have passed through several pregnancies with safety, having at the same time presented the symptoms of puerperal nephritis; should the amount of albumen be moderate, and the secretion free, with a good proportion of solid elements in it; should the evidences of constitutional disturbance be slight, and the effects of prophylactic measures satisfactory, it would not be advisable to induce premature labor, but would be better to await the full term of gestation. "But," said Dr. Thomas, "I should await it as a soldier waits who 'lies upon his arms,' watchful and wary, ready at a moment's notice to meet an issue which threatens night and day."

The third question, What are the most reliable therapeutic agents for the control of the convulsions, and should bleeding be employed in eclampsia? was discussed by Dr. Darwin Colvin, of Wayne County, who strongly advocated bleeding, and Dr. George T. Harrison, of New York, who as strenuously opposed it. After the discussion of the fourth question, In what proportion do the insane in public asylums owe their insanity to puerperal convulsions? by Drs. J. R. MacGregor, of New York, and G. A. Blumer, of the State Lunatic Asylum at Utica, a general discussion of puerperal convulsions and their treatment was participated in by the Association at large.

The following officers were elected: *President*, Dr. Isaac E. Taylor, of New York; *Vice-Presidents:* First District, Dr. L. C. Dodge, of Rouse's Point; Second District, Dr. J. D. Sherer, of Waterford; Third District, Dr. G. W. Avery, of Norwich; Fourth District, Dr. Darwin Colvin, of Clyde. The offices of Recording and Corresponding Secretary were united, and Dr. E. D. Ferguson, of Troy, elected to the position. Dr. J. H. Hinton, of New York, was elected Treasurer, and Dr. J. W. S. Gouley was made Director of the Library.

On the first night of the session an interesting and instructive entertainment was held at the Carnegie Laboratory, when Dr. E. G. Janeway gave a demonstration of projections on the screen of representations of Friedlander's pneumo-coccus, the bacilli of cholera, tuberculosis, anthrax and typhoid fever, and other microbes; after which a large number of microscopical preparations and cultures of the various pathogenic micro-organisms were exhibited by Dr. H. M. Biggs. As previously mentioned, the whole session was wound up very satisfactorily with a *conversazione* and supper.

P. B. P.

INHALATIONS OF COCAINE IN WHOOPING-COUGH.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—In THE JOURNAL of October 9, page 403, Dr. A. Y. P. Garnett has an article on the treatment of whooping-cough by inhalations of muriate of cocaine, in which he says: "In order to procure it in a form sufficiently volatile to be readily vaporized, I selected chloroform as the solvent. A 6 per cent. solution of muriate of cocaine in chloroform was prepared, and 10 minims poured in a wineglass, made warm by tepid water, was placed under the patient's mouth, whilst the mother was instructed to keep the nostrils closed. . . . It was found by this means many of the paroxysms were arrested or materially cut short," etc.

In reading the paper, the thought at once occurred to me that the relief was derived from the chloroform, the vapors of which passed off, leaving the cocaine. At my request Mr. James Kennedy, Ph.G., investigated the matter and handed me the following as the result:

"Cocaine hydrochlorate does not volatilize at the temperature of the water bath, nor does it rise with the vapor of its chloroformic solution. A 6 per cent. solution of cocaine in chloroform, evaporated to dryness on water bath, yielded as a residue the entire quantity of the salt." T. J. TYNER, M.D.

San Antonio, Texas, Nov. 22, 1886.

BOOK REVIEWS.

Two Comedies: AN ILL WIND; AN ABJECT APOLOGY. By F. DONALDSON, JR. 12mo., pp. 79, parchment, Boston: Cupples, Upham & Co. 1887. Chicago: A. C. McClurg & Co.

Even medical men, matter of fact as most of them are, must sometimes indulge in recreation; and when it is such that amusement or recreation is furnished for their confrères it must be all the more pleasant to them. And really, a non-professional book by a physician has a more than common interest for other (reading) medical men. We may often judge a man very much by his avocation, as by his vocation.

Strictly speaking, however, Dr. Donaldson's two comedies may be said to be the records of some cases of aggravated heart disease, of that peculiar form which affects persons between the ages of 18 and—109 (which we believe to be the limit). In all, five cases are recorded, with three complete recoveries. It is only fair to say that the two cases which are not reported as cured passed from observation. It is a matter of interest that three of the five cases were females, as it is the general opinion that this affection is more common among males. Perhaps it is not best to speak of "recovery" in these cases. The worst cases of the disease cause melancholia of various forms, and the affection may be classified under the general term *philomania*; and this may be subdivided into *gynæcomania*, which only affects males, and *andromania*, which is peculiar to females. While this philomania may often cause great depression of spirits, it is very rarely fatal, unless we include the unauthenticated cases reported by writers of fiction. In the majority of cases the disease runs an irregular course, and may be cured of its worst features by self-limitation or by what may be called compensatory cardiac reciprocity. *Philomania acuta* is the less dangerous form of the disease, and is generally of an intermittent type. In the chronic form the unhappy patient may be brought to the verge of idiocy. There is good ground for holding that the disease is often contagious.

As readers we welcome Dr. Donaldson's appearance in that portion of the literary world which we, as medical men, can visit but too seldom. The every-day life of some of us is so full of tragedy that his "Two Comedies" are welcome guests.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION. Eighteenth Annual Session, held at Dallas, Texas, April 27, 28, 29 and 30, 1886. 8vo, pp. 691. Austin; 1886.

The Texas State Medical Association may well be proud of its last volume of Transactions. Some improvements might be easily made in its arrangement. For example, it is difficult to understand why all the papers should be attached as an appendix, and why the publication committee did not do a little more editing. Again, should this volume go abroad some of our European colleagues will wonder why certain French and German names are not spelled correctly. The names of several of our valued contemporaries have also been well disguised in some places. There is another point to which we desire to call attention. One member of the Association reports a case of what seems to have been chronic catarrhal gastritis with some unusual symptoms. It is reported as "A Remarkable Case in my Practice." The first thing to do in writing an article is to give it a proper and descriptive title. We call attention to this now because it is a fault of so many writers to make a title which is descriptive of anything from a ruptured perineum to hay fever. "Cases from Practice" is an abomination which is too frequently seen. The title of a paper should be indexical of the whole paper. All writers may not know this, but a publication committee is supposed to know it.

For all this, however, the volume under consideration is one upon which the members of the Texas Association may congratulate themselves. It is very handsome, and well printed on excellent paper. It contains some good articles, which would be all the better if they were properly indexed. Six hundred and ninety-one pages of book is a good deal to send out without an index. One of the best papers in the volume is on "Boracic Acid in Surgery and Gynecology," by Dr. C. M. Ramsdell, of Lampasas, which will repay careful reading. Dr. O. L. Williams, of Chapel Hill, reports two cases in which electricity acted well in congestive fever (pernicious malarial?). Dr. Q. C. Smith, of Austin, in an interesting paper on the "Treatment of Sporadic Dysenteries," very properly condemns opium, mercury and starvation. Dr. T. C. Osborn, of Cleburne, calls attention to the

usefulness of bimuriate of quinine with urea generally, and particularly in a case of pneumonia. Dr. J. R. Briggs, of Fort Worth, calls attention to the value of lycopus Virginicus (bugle weed) in the bites and stings of insects and reptiles. This plant seems worthy of a closer examination than has been given to its physiological action. A valuable contribution to the subject of malaria may be found in a paper by Dr. Henry K. Leake, on "Malarial Irritation of the Bladder in the Female." Those who may be inclined to doubt the wisdom of conservative treatment in gun-shot fracture of the femur would do well to read the report of four cases, all of which recovered, by Dr. J. T. Field, of Fort Worth. Dr. J. G. O'Brien, of Dublin, reports a case of extraction, by tracheo-laryngotomy, of a watermelon seed from the air passages of a child 12 months old, with recovery. Dr. B. F. Brittain, of Jacksonville, records a very curious case of necrosis of the lower maxilla, which began with toothache. The necrosed portion was removed, with a good result. Dr. M. C. Farrar, of Fort Worth, reports a case of amputation of both legs, with recovery, and death subsequently from abscess of the pancreas. Dr. O. Eastland, of Wichita Falls, reports a case of dislocation of the long head of the biceps, which was reduced spontaneously on the fourth day, after ineffectual efforts by the method of Prince. The Prize of the Association was awarded to Dr. J. R. Briggs, of Fort Worth, for a paper on "Physical and Mental Culture," which we hope to notice soon in another department.

MISCELLANEOUS.

Influence of Music on the System.—It has long been a familar fact that susceptible, or perhaps we ought to say very impressionable, nervous centres, either of brain or cord, or both, may be influenced by music. Whether the influence exerted is not purely physical—perhaps mechanical—and of the nature of vibratory movement of a nature akin to that exemplified by the phenomena of sensitive and musical flames, and obeying the laws of concord or discord, which Newton demonstrated to determining the chromatic and diatonic scales respectively, which Grove further illustrated in the indication of his doctrine of the correlation of forces, and which Tyndall has reduced to practice—may be a moot question, but we cannot doubt that it will sooner or later be settled in the affirmative. However that may be, the fact remains that music does act powerfully on the majority of nervous systems, and there is reason to think that the brain is not alone affected. For example, the movements of the lower limbs both in dancing and marching are distinctly influenced by music independently of the consciousness. When the brain at first participates in the excitement produced, it may become engrossed with other matters, and rhythmical muscular movements of the extremities, and in a lesser degree of the trunk, will be continued automatically in harmony with the music. Direct impressions on the cerebral centres are probably transmitted through the auditory centre. Thus monotonous and slow music will exert a calming influence, provided that it be not too slow to be in harmony with the nerve habit of the individual, as in that case it may irritate. It is also essential to the success of any endeavor to bring the brain under the control of music, that it should first arrest the attention either by its power or sweetness, and then gradualy conduct the organism into harmony with itself. A measured cadence of the sort likely to calm the mind is more likely to augment than to allay irritation, unless it begin with a powerful appeal to the brain in a key which accords with that in which the cerebrum is at the moment itself working. This has not perhaps been sufficiently well understood in some attempts which have been made experimentally to use music as a remedial measure. So with endeavors to rouse the spirits by music, the opening needs to be plaintive, and in the key of melancholy which harmonizes with the brain state of the patient. The attention being arrested and the cerebrum reached through the auditory centre, the key must be gradually changed, and the time quickened in such a manner as to change the brain state. No great progress will be made with the employment of sound, and form, and color, as remedial agents, powerful as these agents really are, until we dismiss the unscientific idea of "mind," and begin to regard the brain as an organ which, like all other parts of the body, obeys physical laws and performs its function by purely physical processes.—*American Musician*, Nov. 27, 1886.

Dr. Shakespeare's Recent Investigation upon Cholera.—On the 18th instant a special meeting of the College of Physicians of this city was held in order to hear a lecture upon Cholera by Dr. E. O. Shakespeare, who has recently returned from a tour of investigation by special appointment of the United States government. During his stay abroad he made personal visits to those whose labors have rendered them distinguished in this field; not only in several countries in Europe, but also in India. In commencing his review of his work, at the College, Dr. Shakespeare gave brief accounts of recent epidemics of cholera in the different countries where it had been studied, and illustrated his remarks by diagrams of morbidity and mortality. The connection between the outbreaks of the disease and infected water-supply was clearly shown in nearly every instance.

Although the proof of the statement that the comma-bacillus is the active and efficient cause of cholera Asiatica was not entirely satisfactory to his mind, the lecturer felt no hesitation in declaring that Koch had conferred an inestimable boon upon the race by placing in the hands of every practitioner an infallible means of diagnosis of this disease from cholera morbus and other diseases resembling cholera. He expressed the opinion that a health-officer or physician who, in the presence of suspected cases and before the prevalence of the malady as an epidemic, should fail to employ this means of deciding whether or not the disease is genuine cholera, would be guilty of criminal negligence.

After a personal visit to Ferran, in Valencia, and an examination of his methods of investigation, he was prepared to endorse the verdict of the French Commission with regard to the condition of his laboratory, but as to Ferran himself he arrived at a different conclusion. He was impressed by his modest bearing, and believed him a cultured gentleman, possessed of no mean skill as a bacteriologist. In his laboratory Dr. Shakespeare found as pure cultures of the comma-bacillus, and as handsomely mounted and stained specimens, as could be found anywhere in Europe. A few of these slides, made in his presence, were exhibited after the lecture was finished.

With regard to the result of Ferran's inoculations, Dr. Shakespeare demonstrated by the official returns made by the Government officers, who are not friendly to Ferran, that there was a sudden and marked reduction in the number of cases and in the mortality in several villages after the inoculations were begun—this measure apparently having about six times the value of ordinary hygienic precautions in checking the epidemic. The facts concerning inoculation, so far as they have been reported officially, seem to indicate the importance of making in future epidemics, this method the subject of a searching scientific investigation, such as it has not received up to the present time.—*Philadelphia Medical Times*, November 27, 1886.

THE INTERNATIONAL MEDICAL CONGRESS.—Among the foreign physicians who are expected to attend the Congress, and to read papers, are the following: Mr. W. D. Spanton, of England; Dr. E. Landolt, of Paris; Dr. A Struebens, of Brussels; Dr. Julius Althaus, of London; Dr. A. Cordes, of Geneva; Dr. P. Ménière, of Paris, ("The Treatment of Fibrous Tumors of the Uterus") Dr. T. M. Madden, of Dublin ("Laparotomy in Relation to Modern Gynæcology"); Dr. W. U. Whitmarsh, of England ("Vaccination and the Pasteur Method"); Dr. Léon Petit, of Paris; Dr. A. Hegar, of Freiburg ("The Diagnosis, Origin, and Surgical Treatment of Tuberculosis of the Genitalia"); Dr. G. H. Savage of London ("Some Relationships of Syphilis to General Paralysis of the Insane"); Dr. W. Macewen, of Glasgow; Mr. Edmund Owen, of London; Mr. Lawson Tait, of Birmingham ("The Pathology and Treatment of Tubal Pregnancy"); Dr. J. Veit, of Berlin ("Tubal Pregnancy"); Dr. D. Perruzzi, of Bologna ("In the Cases of Cæsarean Section in which Porro's Hystero-oöphorectomy is not absolutely indicated, what is the best manner of Suturing the Wound of the Uterus?") Dr. E. Ehrendorfer, of Vienna ("The Prophylaxis of Puerperal Fever"); Dr. J. A. Doléris, of Paris; Dr. Gusserow, of Berlin; Dr. A. Charpentier, of Paris; Dr. G. Braun, of Vienna; Dr. L. Casarti, of Florence ("The Origin and Causes of Sterility in Women"); Dr. J. Korosi, of Budapest ("New Observations on the Preservative Power of Vaccination"); Dr. E. H. Kirch and Dr. A. Olendorff, of Prague; Dr. H. Power, of London ("Microbes in the Development of Ophthalmic Diseases"). Dr. A. Eulenburg, of Berlin; Dr. W. Murrell, Dr. B. W. Richardson, and Dr. J. L. W. Thudichum, of London; Dr. Dujardin-Beaumetz, of Paris; Dr. G. P. Unna, of Hamburg; and Dr. Eustace Smith, Mr. Christopher Heath, and Dr. H. Charlton Bastian, of London, are also expected.—*N. Y. Medical Journal*, Nov. 13, 1886.

DEATH OF M. PAUL BERT.—In the death of M. Paul Bert, which occurred on November 11, science has lost a master whose place cannot be easily filled. He was born at Auxerre, on October 17, 1833, and was licensed as a Doctor of Medicine in 1863. His work in physiology is so well known that it need not be more than referred to. He was elected to the National Assembly in 1872, and was appointed Minister of Public Instruction in 1881–82.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 20, 1886, TO NOVEMBER 26, 1886.

Lieut.-Col. B. J. D. Irwin, Asst. Medical Purveyor, relieved from temporary duty in New York City, and of the charge of the Medical Purveying Depot in that city, and ordered to San Francisco, Cal., to take charge of the Medical Purveying Depot in that city. S. O. 270, A. G. O., Nov. 19, 1886.

Major F. L. Town, Surgeon, ordered from Ft. Clark, Texas, to Post of San Antonio, Texas, to relieve Surgeon J. P. Wright. S. O. 159, Dept. Texas, Nov. 15, 1886.

Major Joseph R. Gibson, Surgeon, ordered for duty as Post Surgeon, Ft. Sayon, Col. S. O. 134, Dept. Mo., Nov. 20, 1886.

Capt. J. L. Powell, Asst. Surgeon, ordered for duty as Post Surgeon, Ft. Supply, Ind. Ter. S. O. 134, Dept. Mo., Nov. 20, 1886.

First Lieut. Freeman V. Walker, Asst. Surgeon, assigned to duty at Ft. McIntosh, Tex. S. O. 159, Dept. Texas, Nov. 15, 1886.

First Lieut. Paul Clendenin, Asst. Surgeon, recently appointed, ordered to report to commanding general Dept. of Texas, for assignment to duty. S. O. 271, A. G. O., Nov. 10, 1886.

Capt. Henry Johnson, Medical Storekeeper, will, in addition to his present duties, assume charge of the Medical Purveying Depot in New York City as Acting Asst. Medical Purveyor. S. O. 270, A. G. O., Nov. 19, 1886.

APPOINTMENTS.

Lt.-Col. John Moore, Asst. Medical Purveyor, to be Surgeon-General of the Army. Nov. 18, 1886.

Ball, Robert R., to be Asst. Surgeon, with the rank of First Lieut. Nov. 19, 1886.

PROMOTIONS.

Major Joseph C. Bailey, Surgeon, to be Asst. Medical Purveyor, with the rank of Lieut.-Col. Nov. 18, 1886.

Capt. Chas. L. Heizmann, Asst. Surgeon, to be Surgeon with the rank of Major. Nov. 18, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE TWO WEEKS ENDING NOVEMBER 27, 1886.

Nash. Francis S., P. A. Surgeon, ordered to special duty at Smithsonian Institution. Nov. 26, 1886.

Rhoades, A. C., U. S. N., Medical Inspector, ordered to special duty attending officers and families, New York City.

Law, Homer L., Surgeon U. S. N., ordered before the Retiring Board, Dec. 2, 1886.

Lippincott, George C., P. A. Surgeon U. S. N., ordered before the Retiring Board, Dec. 6, 1886.

CORRIGENDUM.

In THE JOURNAL of November 27, p. 597, in third line from last of Dr. Gaston's remarks on Dr. Smith's paper, for "pus" read *fæces*.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, DECEMBER 11, 1886. No. 24.

ORIGINAL ARTICLES.

ESSENTIAL VERTIGO.[1]

BY L. BREMER, M.D.,

OF ST. LOUIS, MO.

Impairment of equilibrium, accompanied by strange sensations of varying kinds and degrees, is met with as a symptom, not only of cerebral but of a great many other diseases, especially those of an exhausting and debilitating character. Besides the physiological vertigo produced by rapid rotatory movements or by a sojourn in high places, temporary pathological giddiness or dizziness is not uncommon with many persons enjoying, in other respects, good health. In fact, there is scarcely an adult but has not, at one or the other period of his life, experienced vertigo of some kind. Whereas, then, vertiginous sensations may be said to fall within the boundary lines of health, they may constitute a well-marked disease and rise to the dignity of a pathological entity, if they are severe or persistent enough to interfere with the comfort or occupation of the individual so affected.

I will remark here that the moral effect of the same degree of vertigo varies much with the individual moral and mental disposition of the patient, and that to the one an attack of vertigo of a certain intensity will appear of the gravest importance, which by another would be ignored, nothing thought of and easily forgotten. Thus the psychical, and consequently physical, effect of such an attack will tell more on the excitable than the phlegmatic. Children seem less disposed to the trouble than adults; or, perhaps, are less likely to speak about it than adults who have an idea, however vague, of its seriousness. The English expressions: giddiness, dizziness, lightheadedness, all of which are comprised in the term vertigo, signify a number of totally different affections; they are often used promiscuously by physicians and patients, and may mean loss of balancing power, simple fulness or pressure in the head, faintish feelings, temporary confusion of thought, or bewilderment and strange and undefinable sensations in the head in general.

The kind of vertigo which is the subject of the present paper shows a tolerably well defined and circumscribed clinical picture. I have chosen for it the term, essential vertigo, as suggested by Nothnagel[1] It is the form which by others has been described as "idiopathic," or a "simple" vertigo. This affection must, in the present state of our knowledge, be classed with the neuroses; I therefore exclude those cases that are due to disturbances of vision, hearing or digestion, to the gouty diathesis, epilepsy, malaria, cardiac trouble, acute infections, and organic diseases of the brain, intracranial tumors, atheromatous condition of the cerebral arteries; in short, all the so-called organic, *i. e.*, coarse pathological lesions of the central nervous system.

Although there are many variations of the disease and, since the symptoms are chiefly subjective in character, ever changing according to the individuality of the patient, the following may be said to be an average representation of the symptoms of essential vertigo:

The patient, generally, though not always, more or less anæmic-looking, debilitated and nervously exhausted by overwork, disease or excess, experiences, at greater or lesser intervals, a strange sensation in the head, a feeling of emptiness accompanied with loss of balancing power. The attack may come on suddenly or after certain premonitory signs, while walking, sitting, or lying down, during day or night; often in the midst of apparent perfect health, at other times on the supervention of slight ailments, acute catarrh, indigestion, etc. The victim of the attack feels as if his whole strength were to drop away from him, as if the ground were drawn from under him; he is at sea, unstable on his legs and, as if on board a ship, he straddles in order to enlarge his base, or grasps the nearest support. In severe cases he actually falls to the ground; but this is done in a coördinated manner, unlike an epileptic attack, care being taken by the patient not to injure himself by the fall. There is no loss of consciousness, though there may be a warning of it, viz.: dimness of vision and hearing and other signs premonitory of fainting. If the attack be a severe one and the patient be not yet accustomed to vertiginous feelings, a very striking symptom is the intense terror, a vague fear of becoming paralyzed, of dropping suddenly out of existence, of utter annihilation. For hours and sometimes for days this terror vibrates in the nerves, and leaves the victim in a depressed and demoralized condition. Generally speaking, essential vertigo comes on by short spells, the whole attack lasting only a few seconds or minutes, but there are cases in which a status

[1] Read in the Section of Materia Medica and Therapeutics, at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] Vertigo, Ziemssen's Handb. d. Spec. Path. u. Therap. Supplement C, p. 192, ff. Nothnagel proposes this name for those forms which arise repeatedly in some persons without the slightest etiological trace. "As a matter of course," he adds, "this name is only a preliminary cover of our ignorance."

vertiginosus, analogous to the status epilepticus, is developed, incapacitating the patient for the ordinary duties of life and for business. I have known such patients to remain in this state for weeks, day and night.

The objective signs of an isolated attack are pallor of the face, often of the whole surface of the body, cold extremities covered with clammy perspiration, uneasiness and restlessness, a desire to move about, to change place, as if any other locality offered greater security from an impending catastrophe than just the spot where the patient happens to be at the time. Meanwhile the heart's action, especially in persons who are, in a measure, used to the attacks, remains normal, whereas in others it is considerably slowed by fear or quickened by excitement. Again, these disturbances may be present independently of any emotion. A gentleman under my treatment counted during some of his attacks thirty-six beats a minute, whilst in others, especially when they occurred in rapid succession, the pulse would run up to 120. A distressing form is the nocturnal vertigo. The patient wakes up suddenly with a strange sensation of oppression in the region of the heart, great fear, and loss of balance. This form is often observed after errors in diet.

After the vertigo has ceased, relief may be complete, the patient remaining free from the trouble for days, weeks or even months, but the rule is recurrence in short intervals. In many cases the attack leaves a psychical depression and great anguish behind it, the patient being in constant fear of a reappearance of the trouble. In this state of mind even slight vertiginous sensations, the most insignificant aura, will frighten the unfortunate patient and predispose him to another spell. This distrust and fear is in some cases carried so far that an occasional misstep on the street, or staggering over an object on the ground, a leaning to one side or a quick movement will make him think of a new attack; there is immediately set up a precordial anxiety, and the imaginary vertigo may be turned into a real one. Thus a vicious circle is established, in which cause and effect are intimately blended, and cannot be distinguished the one from the other. The same interweaving of cause and effect may be said to exist between vertigo on one hand, and visual, aural and pneumogastric disturbances on the other. It is very rare that vertiginous patients are not affected, however slightly and transiently, with functional disorder of the auditory or visual apparatus, and especially of the stomach and heart. The pneumogastric seems to play a similar mysterious and important part in vertigo as in epilepsy. It would be erroneous, though, to classify such cases as visual, aural, cardiac or stomachal vertigo, the chief trouble being an instability of the vasomotor centre or centres, an instability which is greatly increased by the peripheral complications mentioned, and which in its turn is capable, probably, of generating them if not yet existing, and aggravating them, if already present.

A lowered tone of the whole nervous system, presenting often unequivocal neurasthenia in its manifold manifestations, is met with in all cases of confirmed vertigo, either as a cause or a result, or both.

The following case will illustrate some of the preceding remarks:

S. C., a lawyer, æt. 32, who had for five or six years lived a rather irregular life, working very hard at times at his profession and indulging in liquor and tobacco at others, coming of a neurotic family (father dipsomaniac, mother slightly hysterical), was, while crossing a public square, suddenly taken with strange sensations in the region of the heart, and in the head. He found himself making several steps in a different direction from the one intended, and, being in great fear lest he might fall, took hold of a tree which happened to be near by. He was at the time in good health, and had not touched a drop of liquor or smoked a cigar for months. In order to get over this alarming sensation he stamped with his feet and shook his arms. His extremities felt cold, and there was a clammy perspiration on his forehead and in the palms of the hands. In a few moments the attack was over, and he walked on without further difficulty. The spell, however fleeting, left him nervous and had a very depressing effect on his mind. He felt gloomy and morose, lost confidence in himself and had all kinds of dismal forebodings as to his future, especially his professional career. Although the vertigo did not repeat itself in the degree he had experienced the first time, he felt, when walking on the street, an almost constant warning of another attack, which it seemed to him he could ward off by walking briskly or shaking his arms in order to accelerate the circulation of the blood. With the greatest diffidence he attended to his business in the court-room; the excitements incident to his avocation, the mental efforts he had to go through, and the close atmosphere in the court-room, invariably made things worse. In crossing the place where he had had his first attack he instinctively tried to avoid the tree, but, seeing how ridiculous this fear was, he made it a point to pass the scene of his first spell as often as he had an opportunity, and by dint of great efforts, succeeded in overcoming his apprehensions. His physical condition, and especially his state of mind, were at times desperate. The recumbent position or, if this was not feasible, an ounce or two of whiskey, would keep the worst symptoms in abeyance, whereas the alcohol increased the trouble when indulged in even slightly in excess of his accustomed quantity.

By leading a regular life, carefully attending to his diet and his clothing, by bathing in cold water and discreetly using whiskey (one ounce twice daily), the vertigo gradually disappeared, although every little ailment, such as taking cold, a touch of malaria or a slight excess in alcohol, was apt to bring on an aura. Theaters and crowded places in general he had to avoid, even after he considered himself well, owing to ill-defined sensations of uneasiness. He managed, however, to pursue his business without betraying his peculiar affection, although while pleading in a case the idea would sometimes harrass him, that his vertigo would return and a public sensation result. With these exceptions, nothing reminded him of his old trouble, and he was in every sense of the word a healthy man, when one day, while inspecting the roof of his house from the street below, he had a

fresh and very severe attack, owing, no doubt, to the continued abnormal and strained position of his head. This spell was followed by a series of milder ones. By strict hygienic measures they disappeared within three weeks, when he regained his former good health.

This individual had been of a nervous disposition from his early youth, and subject to vaso-motor disturbances. During the years of puberty he had fainted on several occasions, and all his lifetime he had been greatly annoyed by a tendency to blush on the slightest occasion. He had, after the first few attacks of vertigo, a pronounced fear of softening of the brain, an idea which, by a good deal of reasoning, he finally got rid of. He is now, one year and a half after his relapse, free from all vertiginous sensations, and in full possession of his former self-reliance and energy. This case is one of essential vertigo *par excellence*. There were no disturbances of vision, audition, or digestion. The psychical impression of the first attack, the fear of the tree near which this occurred (topophobia), the general diffidence and demoralization, deserve special mention. The strained position of his head by which a fresh outbreak of the trouble was brought on is also of significance. It is the prolonged upward gaze which is peculiarly apt to lead to an attack. Hence picture galleries and museums are to be avoided.

The following case is not so simple as the preceding one, but none the less characteristic, owing to the large collateral train of strange and ever-changing symptoms:

F. S., æt. 37, a merchant, presents himself at my office in August, 1884. He is anæmic, greatly emaciated; his face almost lead-colored. His mother is subject to megrim; his father died at an advanced age from phthisis, having ailed for a great number of years. He, too, suffered from vertigo for years, and is said to have been cured of it by cupping of the nape of the neck. Patient has been in his younger days "on the road" as a traveling salesman for fourteen years, and undergone all the hardships and irregularities incident to such a life, and has committed excesses of various descriptions. Three years previous to his coming under my treatment he was suddenly, while in the act of defecation, taken with violent vertigo, which afterward repeated itself in such a degree and with such frequency that he was forced to temporarily abandon his business. After various modes of treatment had failed to improve his condition, he sought relief in traveling, and finally went to Hot Springs, where, in addition to warm bathing, he was, on a vague suspicion, subjected to an antisyphilitic treatment both by inunction and the administration of the iodide of potash, which soon made a perfect wreck of him. A trip South during the winter did not improve him; he lost flesh rapidly, becoming weaker from month to month, and was almost driven to utter despair by the permanent vertigo which at times was so severe that he could not cross the street.

At the time I saw the patient he weighed about 116 pounds, his usual weight, when in good health, being 135 pounds. Beside the vertigo, he complains of shifting pains, their principal seats being the regions of the heart, spleen, left shoulder and nape of the neck. The head is exempt. The pain around the heart and the spleen has a vicarious relation with the vertigo. Whenever there is an exacerbation of the pain, the vertigo is lessened or entirely disappears; whenever the pain is gone the vertigo is at its worst. There is also pain in the lumbar region and slight twitching of the muscles of the left side of that region. He has night sweats and occasionally polyuria, which produces great exhaustion. The urine at such times is limpid and of low specific gravity. At such periods, too, his vertigo is gone, to set in again on the disappearance of the "nervous urine." His appetite is capricious, his tongue furred, and has been so for a number of years, his stomach often distended with gases, the expulsion of which by the œsophagus affords generally relief to the pericordial pain. He sometimes complains of fulness in the left ear; which is, however, transient. One day he noticed that he could not hear with his right ear. This deafness lasted only three hours. He grinds his teeth at night, sometimes so loudly that his wife is awakened by the noise. In consequence of the constant friction, the crowns of the molars are completely ground off. The vertigo is often attended with cold extremities and clammy perspiration, but never with nausea.

The symptoms of the patient are ever varying, and sometimes surprising to him on account of their novelty. There is no stability in any of the pathological manifestations except the vertiginous sensation, and even this is sometimes varying in character; thus, instead of there being a disturbance of equilibrium, a tendency to fainting sometimes predominates, and these are the times when the patient's sufferings are greatest and when he is most alarmed. Nor is the vicariousness of the symptoms invariably observable, there being times when he suffers both from excessive pains and vertigo. When in this condition, the patient is unable to get up from bed.

Errors in diet, colds, malaria, and excitement of all kinds, invariably aggravate the trouble. This patient was very much improved by cold sponging every morning, dry diet, Carlsbad salts in the morning, and from 6 to 7 drops of muriatic acid three times a day after meals. At bedtime, and whenever threatened by an attack of vertigo, he took 30 grains of bromide of potassium in one teaspoonful of the elixir of the valerianate of ammonia. Besides, patient was allowed two ounces of whiskey daily, one at 10 A.M., the other at 4 P.M. Under this treatment all the symptoms, except the shifting pains, disappeared. His weight ran up to 142 lbs., being more than he ever weighed in his life. His spirits, too, were considerably improved, his hopelessness yielding to a more cheerful mood, which made him bear the pains with comparative facility. These pains appeared generally in the evening; during business hours he used to be free from them. He felt best on getting up in the morning, and worse as the day advanced.

I look upon this case as one of outspoken neurasthenic vertigo. It might be mistaken for stomachal vertigo, and, indeed, the treatment consisted chiefly in combating the catarrh of the stomach complicating the trouble. But this condition of the stomach, the

furred tongue, etc., had made their appearance a long time after the commencement of the vertigo, and may therefore be considered as a consequence rather than a cause of the nervous debility of the patient. Again, the absence of nausea speaks against stomachal origin. To prove that the case was one of nervous dystrophia, it suffices to say that all the various pains would disappear during business hours, when the patient was actively engaged, to set in immediately when neither mind nor body were occupied. A dose of the bromide, an ounce of whiskey, and sometimes a 10-grain dose of quinine, would terminate an attack of vertigo as if by magic.

The good effect of the treatment lasted about eight months, when, in consequence of a great excitement caused by a severe accident in his family, the old symptoms manifested themselves with renewed vigor. Loss of sleep, irregular diet and change of season (spring) brought on a complete relapse. There was irritability of the heart, the pulse running up to 100 a minute and more; at other times it was normal and even below normal. His face was at times of a dark purple color; at others deadly pale. The symptoms now were extremely intense and alternating; palpitation of the heart, throbbing in the left side of the head, vertigo, faintishness, and pain, especially in the nape of the neck, appearing and disappearing in wild and rapid succession and demoralizing the patient. None of the remedies employed, among which amyl nitrite, caffeine and digitalis may be mentioned, gave satisfactory relief; whiskey alone in greater quantities seemed to be capable of alleviating the symptoms. During this stage the patient became a "rounder," going from one doctor to another to have his heart examined, believing, in spite of my assertions to the contrary, that he had an incurable heart disease.

In the preceding two cases the impairment of equilibrium was very marked, but there are others where this feature is less pronounced, the higher centres being chiefly affected. The following case will illustrate this point:

H. P., æt. 28, of temperate habits, nervous temperament, slim build and rather hectic appearance (one sister is consumptive), presents himself in May, 1885. He has never indulged in alcoholic excesses. but has, up to three years ago, danced whole nights to complete exhaustion. He finally became so debilitated that he had to give up dancing altogether. In November, 1884, he was suddenly taken with dizziness in the head, which has persisted, with intervals of various duration, up to the present date. The trouble consists more in mental confusion, incoherence of thought, temporary impairment of memory, and slight paraphasia, than in equilibrial impairment, although the latter element is also present in his attacks. These come on principally while writing letters, and by mental efforts of a similar kind, but at times the strange and alarming sensation is constantly on him. At one time a "status" was developed, lasting, without any appreciable intermission, for two weeks. An injury of his thumb resulting in suppuration put an end to the trouble as long as the suppurative process was going on; it reappeared on the healing of the wound. Patient complains of numbness and heaviness of the left arm. There is a very slight mitral stenosis, which does not, however, prevent him from executing rapid movements such as running up and down stairs. There is also slight nervous dyspepsia, the tongue clean, the stomach bloated after meals, with heaviness in the epigastrium. The dyspeptic symptoms showed themselves some time after the appearance of the dizziness. Patient is afraid of having softening of the brain, and finally losing his memory and mind altogether. His skin is abnormally dry. The same treatment as in Case 2 was instituted, the Carlsbad salts and muriatic acid being substituted by Fothergill's pills (strychnine and ipecac). The improvement was prompt, but the relief obtained was again lost two weeks afterwards by a night's dancing. The relapse finally yielded to the old treatment, but not with the same promptness, The patient, although greatly improved, has occasional attacks of vertigo; the numbness of the arm is entirely gone, his disposition has become more cheerful, and he can, without any difficulty, perform his duties as a bookkeeper and manager of a tailoring establishment. Great benefit was derived from the administration of 5 drops of Fowler's solution three times a day.

In this individual the circulatory trouble affected, doubtless, more the anterior and, perhaps, middle portions of the brain (numbness of arm, mental confusion, paraphasia and loss of memory); whereas in the first two cases the principal site of the trouble lay in the posterior portion of the cerebrum and in the cerebellum. The disappearance of the vertigo during the existence of a suppurating wound is particularly instructive.

A fourth case is interesting from its attendant symptoms and a possible organic lesion of the central nervous system. A. R., æt. 47, a preacher, over six feet high, rather fleshy, with good family record, absolutely abstemious from alcohol all his lifetime, is afflicted ever since his childhood with a slight trembling of the hands which he formerly could control by his will; his handwriting used to be firm and neat. No history of chorea during childhood. Two years ago, when officiating at the altar, he suddenly became giddy and had to be led out of church. Ever since this time he has an invincible fear of appearing before his congregation and in public generally. During a visit to this city he was asked to make a few remarks to the children of a Sunday-school. In spite of a supreme effort to comply with the request he was, on trying it, completely at at a loss to utter a single syllable. He cannot approach the scene of his first attack of vertigo, the altar, without immediately experiencing a giddy sensation or a morbid fear of the same. His appetite is good. Being very fleshy before, he lost during the affection twenty lbs. All events relative to himself or his family, whether sad or joyful, excite him very much. The birth of a little son, a long hoped for event, threw him into a state of extreme nervousness lasting several days. The trembling has increased considerably since the beginning of the vertigo; he cannot drink a glass of water without spilling a portion of it. In spite of

this *tremblement intentionel*, there are no other symptoms of multiple sclerosis. The tremor is confined to the upper extremities, head and legs being exempt. He claims that he became hypermetrophic within eight days after the beginning of the vertigo. This defect is completely corrected by wearing proper glasses. Ophthalmic examination is negative. He has no pain anywhere. The patellar tendon reflex is somewhat exaggerated. His chief complaint uncertainty of gait and mental anxiety. Excepting the loss of weight his physical condition is, on the whole, the same to-day as it was when the vertigo commenced. The topophobia (fear of the place where the altar stands) and the fear of appearing in public after twenty years of a clerical career, are conspicuous and noteworthy symptoms in this case. The trouble is engrafted upon and superadded to a previously unstable nervous disposition. I saw the patient only once and have no further record of the progress of his case. I speak of it as one of essential vertigo because, in spite of certain symptoms indicating coarse lesions, its clinical picture does not fit the frame of any typical lesion of the central nervous system.

Vertigo and Neurasthenia.—It may be fairly urged that in the cases described above I have simply related instances of neurasthenia manifesting itself by equilibrial disturbances. Further, Cases 3 and 4 might seem improper for illustrating essential vertigo, since in the former there is a slight lesion of the heart, and in the other there is suspicion of organic disease of the central nervous system. My reasons for citing them in connection with the subject are merely clinical ones. As to the neurasthenic character of the trouble, I perfectly agree with those who class essential vertigo among the many symptoms composing the mottled clinical picture of nervous exhaustion. But, accepting the two principal divisions of neurasthenia into cerebrasthenia and myelasthenia as proposed by Beard, the form just described and illustrated by me would rather deserve the name of meancephalasthenia, since it is the mid brain, the recognized seat of the equilibrial centre or centres, where the nervous instability chiefly manifests itself. But the localization of perverted nerve action in the mid brain is not perfect, bulbar and hemispheric symptoms generally being present, as shown by the cases detailed above, and as will be dwelt on more fully further on.

Physiological Researches.—The experimental researches instituted to establish an equilibrial centre in animals have not been conclusive enough to be of great value in the explanation of essential vertigo. All such experiments have of necessity a direct bearing on objective vertigo, or that form in which there is an appreciable and visible loss of balancing power, such as a drawing or falling to one side, circus movements, etc. But essential vertigo partakes more of the subjective kind; there is a psychical element in it, is often of a purely mental or hallucinatory character and cannot, therefore, be rendered intelligible by results of vivisection.

Equilibrial Centre.—But even the mechanism of purely objective vertigo is far from being understood. "We cannot, at present at least, define a coördinating centre in the same way that we can the vaso-motor or respiratory centres" (Foster). Since the famous investigations of Flourens it seemed to be a settled fact that the cerebellum was the chief, if not the exclusive equilibrial centre. But pathological observations disproved this doctrine. Lesions of considerable extent were found in the cerebellum of patients who, during life, had not betrayed the slightest symptoms of ataxy or vertigo. Nothnagel believed that this could be explained on the ground that the lobes of the cerebellum were not essentially concerned in maintaining the equilibrium of the body, but that the vermiform process was the chief coördinating centre, an injury of which was, under all circumstances, followed by incoördination.

But even this restriction does not seem to suffice, and recent investigations assign to the cerebellum an office altogether different from coördination. Luciani[2] was the first to succeed in almost completely removing the cerebellum of a dog and keeping the animal alive for a considerable time. The dog operated upon lived eight months. Luciani found, when the dog had recovered, that the peculiar state of the muscles known as cerebellar ataxy was not due to a deficient coördination, nor to an impaired muscle sense, but that the ataxy was caused exclusively by a deficient muscular tone and the insufficient energy exercised by the nerves on the involuntary muscles. It is, according to Luciani, a general dystrophia that results from the abolished cerebellar innervation, and it is this dystrophia that gives rise to the supposed ataxy.

Before Luciani similar views have been expressed by Schiff,[3] according to whom there are in the cerebellum "certain apparatus which *reinforce* all muscular actions necessary for complicated movement."

One of the most indefatigable workers on the subject of coördination and equilibration has been, of late, Bechtarew. By a number of experiments upon animals detailed in a comprehensive treatise,[4] he comes to the conclusion that in the higher animals there are three centres presiding over the maintenance of equilibrium: the cerebellum, the central gray substance of the third ventricle, and the olivary body of the medulla oblongata. All these central organs are in connection and correspond with as many peripheral equilibrial apparatus: the semicircular canals, the visual organ, and the tactile nerves of the skin.

Landois[5] looks upon the tactile nerves, the nerves of the muscular sense and the ampullary fibres of the auditory nerves, as being the peripheral organs concerned in maintaining the equilibration.

The Mechanism of Equilibration.—There can be no doubt that our body is properly balanced by means of a number of afferent impulses which in their turn react on certain efferent nerves to call into action muscles or groups of muscles. Instead of one single coördinating or equilibrial centre, there is a complex

---

[2] Linee generali della fisiologia del cerveletto. Publ. del R. A. di stud. sup., in Firenze, 1884,

[3] Ueber die Functionen des Kleinhirns. Pflueger's Arch., Bd xxxii, 1883.

[4] Pflueger's Archiv., Bd. xxxi, 1883.

[5] Eulenburg's Realencylop., art. Vertigo.

nervous machinery composed of very different and specialized nerve elements, the harmonious coöperation of which constitutes the balancing power. In short, there are a number of equilibrial centres corresponding to a number of equilibrial peripheral nerves.

Encephalic Origin.—An injury or functional impairment of any part of this equilibrial mechanism, central or peripheral, will be followed by incoördination, by vertigo. There is, consequently, a vertigo of peripheral and one of central origin. It is the latter which, in the absence of coarse lesions, constitutes essential vertigo. It probably depends primarily on vaso-motor disturbances which, secondarily, give rise to weakness and irritability of the cells of the equilibrial centres. These centres being situated in the mid-brain (cerebellum, corpora quadrigemina and pons), are nourished by branches of the basilar artery. A spasm of this artery or any of its branches determines impairment of nutrition, and consequently of function of the equilibrial cells. By repeated attacks of such angio-spasms there is set up a permanent irritable weakness of the centres, which finally may be disturbed in their function by trivial irritations of the peripheral equilibrial nerves (ampullary branches of the acoustic, retina, pneumogastric) without the intervention of the vaso-motor centres. Hence the apparent aural, ocular and stomachal vertigo in the nervously exhausted who are free from organic aural, ocular or gastric disease.

But the starting point of the disturbance may be lower down, in the medulla oblongata, especially in such cases where faintishness is a complication. We know that attacks of outspoken syncope are more frequently observed in organic affections of the bulb, and the inference is admissible that partial or abortive fainting spells may result from simply functional derangements of that part of the nervous system.

Again, vertigo is one of the commonest symptoms in structural diseases of the cervical portions of the spinal cord, whereas it is absent in the lesions confined to the dorsal and lumbar portions.[6] This observation simply means that in the cervical affections the medulla oblongata, with its centres, is functionally deranged owing to a neighboring focus of disease. Again, the "neurasthenic" pains sometimes observed in the nape of the neck (see Case No. 2) in vertigo patients, also point to the medulla oblongata as a possible seat of the trouble.

The concomitant disturbances of respiration, of the heart and stomach, so often observed in vertigo, also speak in favor of this view, and are easily explained by the close proximity of the respiratory, heart, and pneumogastric centres, to the vaso-motor centre which plays so prominent a part in vertigo.

Morbid Fear—As to the morbid fear so common in persons suffering with vertigo, we know that it is a prominent symptom in organic bulbar disease, "in which it means that life is in immediate danger" (Wernicke). This morbid fear, then, may also be referred to a functional derangement of the medulla oblongata, although there is no valid reason why it should not be brought in connection with and find its analogon in those cases of anguish that precede the bursting of cerebral arteries or the formation of abscesses. This morbid fear has a tendency to attach itself to or concentrate itself upon certain objects, places, or conditions. After one or a series of intense attacks of vertigo, the whole psychical stamp of the patient undergoes a profound change. The most resolute man may become an effeminate and vascillating weakling. There is a stain on the brain that disappears only with the general improvement of the whole nervous system. This condition is described by some authors as male hysteria; by others as hypochondriasis.

The most common form of these morbid fears is topophøbia (Beard), or fear of a certain place or places. The scene and incidents of the first severe attack of vertigo impress themselves indelibly on the mind and memory of the patient, who shuns those places and fears to approach them. Thus, one patient who had the first attack in the water-closet in his store, would neither use it or go near it ever afterwards; another could not sit in a rocking chair, and a third could not pass a tree for similar reasons.

By the preceding remarks I do not mean to imply that topophobia is invariably the result of vertigo. It may be a manifestation of neurasthenia in general, or hypochondriasis. The same is true of agoraphobia, or the fear of open places or squares. Although I have found it associated with vertigo, it is not, as has been pointed out by other authors, a form of vertigo, although it is a matter of daily experience that vertigo patients do not like to cross places where there is no chance, in case of an attack, to sit down, lean against a tree, etc.

Finally, dinophobia or fear of vertigo is very common among the majority of the cases under consideration. It leads to mental vertigo, that condition in which the patient is constantly on the alert.

If the chief vaso-motor centre in the medulla oblongata be the centre of functional disturbance, there will be, in addition to a diffuse cerebral anæmia giving rise to vertigo and faintishness, a general arterial spasm producing pallor of the skin, chilliness and cold perspiration, most marked in the palms of the hands. In some cases, however, the arterial spasm and consequently the anæmia, is more of a local character, and confined to the central nervous system or parts thereof. Under these circumstances there are no external objective symptoms accompanying the vertigo. The nature of the latter will vary with the subsidiary vaso-motor centres acting on certain circumscribed portions of the brain. Thus, if the cerebellum be the principal seat of ischæmia, there will be actual staggering and reeling (cerebellar vertigo, Immermann); if the posterior half of the large hemispheres be chiefly attacked, abnormal sensations in the extremities, numbness, tingling, formication, etc., may be looked for; whereas anæmia of the frontal lobes will manifest itself by confusion of thought, aphasic symptoms etc., and the implication of the basal ganglia will be followed by disturbances of hearing and vision. Generally, however, there is not a distinct line of demarcation between these forms. It would be a mistake, though, to assert that

[6] Cp Girandeau, Des accidents vertiginens et apoplectiformes dans le cours des maladies de la moëlle épinière. Gaz. Méd., May 3, 1884.

all kinds of vertigo depend upon circulatory changes in the central organs. In ocular and aural vertigo proper the ganglionic cells of the organs of equilibration or reinforcement may be directly affected by essential nerve-vibration starting from the peripheral terminations of the optic and auditory nerves, without the intervention of vaso-motor influences. Assuming this to be true, loss of equilibrium would find its analogue in certain forms of reflex paralysis. On the other hand, it is a one-sided proposition advanced by some otologists, and among others Woakes, that all kinds of vertigo are due to disease of the auditory apparatus. Nobody will deny the great importance of the internal ear as being the chief peripheral organ of equilibration, and clinical observations of changes in the intralabyrinthine pressure proves it every day, but in many cases of vertigo there is not the slightest trace of ear disease discoverable. In these the impairment of hearing, or tinnitis, is, like vertigo of central origin, the auditory trouble is not the cause, but merely the accompaniment, of giddiness.

Minor Epilepsy and Vertigo.—Although essential vertigo has never been known to pass into epilepsy, and though the vertigo under consideration has nothing to do with epileptic vertigo so-called, which, as is well known, is a misnomer, there are some traits that are common to both affections. What has been said of epilepsy (Gowers), that every fit is the result of those that have preceded it and the cause of those that follow it, is also applicable to vertigo. It is not only the peculiar mental state, the anxiety and fear that predispose to and produce a vertiginous spell on the slightest provocation, but an instability, a want of resistance of the nerve cells themselves is set up by a number of repeated attacks, paving the way for and facilitating future spells. This instability may concern the anatomical elements of the common vaso-motor centre in the medulla oblongata, the nerve elements of the superior or inferior cervical ganglions (the local vaso-motor centres of the brain), or the ganglionic cells of the various equilibrial centres of the brain. Like epilepsy, vertigo occurs with and without warning, sometimes in the midst of good health, like an explosion. In some of the severer forms I even saw twitching of the facial muscles, especially the orbicularis oris, and gritting of the teeth at night.

Etiology.—Essential vertigo is preëminently a disease of the middle period of life; it generally occurs between 35 and 50, *i. e.*, that period in which most of the nervous affections are developed. The remote and most important cause of vertigo is a neurotic disposition and a general defective nutrition of the brain. Individuals liable to vertiginous attacks are generally very impressionable, blush and change color on the slightest provocation, are easily frightened, and give other evidences of an instability and irritability of the central nervous system, and of the vaso-motor centres in particular. In short, the victims of vertigo are recruited from among that ever increasing class of neurasthenics who have been so graphically depicted by the master hand of Geo M. Beard in his classical treatise on "Nervous Exhaustion." I differ, however, from the eminent author when he considers this trouble as peculiarly American. Wherever civilization has taken a foothold, with its attendant evils of over-work and under-rest, of strife and struggle, of unbridled ambitions, passions and excesses, neurasthenia will be found to exist.

Among the immediate causes, exhausting diseases and excesses of all kinds, exposure to the rays of the sun, overheated and badly ventilated rooms, indigestion, mental emotions, and malaria may be mentioned. The latter is, at least in our section of the country, responsible for the often observed recurrence of vertigo in predisposed individuals, and occasionally an attack of intermittent fever may be ushered in or substituted by a spell of vertigo. It is preëminently malarial cachæmia that accompanies or gives rise to the most obstinate cases, and if it is true that nervous exhaustion prevails to a greater extent in the United States than in other countries, the greater prevalence of malaria with us is one of the responsible factors. Next to hereditary predisposition there is no more fertile soil for the neuroses to grow and develop upon than malarial cachexia.

Influence of the Seasons.—General nervous debility makes the body a pretty reliable barometer. This is particularly the case in those neuroses where vaso-motor disturbances predominate. Some of my patients could, by an increase of vertiginous sensations, foretell a change of the weather, and Romberg mentions that vertigo is more frequent in the spring and fall than during the other seasons. This means that sudden changes of temperature may bring on or aggravate vertigo. In our latitude, however, there is no season more trying to vertigo patients than the hot summer months. A moderately cold winter and the months of May and June are, in our part of the country, the most favorable to the patients.

Treatment.—It has been well said of neuralgia that it is a cry of the nerve for better blood. The same is true of vertigo. It is a warning that the equilibrial centres are not supplied with the necessary amount and proper quality of blood. Indeed, neuralgic pains are very frequently associated with vertigo, so that we are justified in concluding that both are due to the same cause, viz., anæmia; although the clinical manifestations are different. The plan of treatment, then, is clearly the reëstablishment of the vaso motor equilibrium, and the normal quality of blood. The former can be accomplished only by the latter, for it is the condition of the blood in the first place that calls into action and regulates the principal centres in the medulla oblongata, the respiratory and vaso motor centres.

Hence, therapeutical measures must be of an essentially reconstructive character, and the stomach and food must be the chief objects of our attention. Without a strict régime or neglect of the physiological requirements of the digestive tract all therapeutical measures become nugatory.

Gastric Complications.—I venture the broad statement that there is no case of essential vertigo without a more or less disordered digestion. A simple assertion on the part of the patient that he has a

good stomach, is without value; on closely questioning him it will be found that he suffers from one or another form of dyspepsia. It may be mentioned here that "a good stomach," or "a good digestion" are only relative conceptions. One of my patients told me that he had an excellent digestion, "because he was in the habit of passing a great amount of wind." The getting rid of his flatulency with him was a sign of a normal digestion. Dyspepsia, then, permanent or intermittent, functional or organic, existing in spite of dietetic precautions or brought on by periodical excesses in eating and drinking, will be found in the majority of vertigo patients. This, of course, does not mean that every case of vertigo is one *a stomacho læso*. In this latter affection we have generally to deal with a catarrhal condition of the stomach, and although there may be a blending of the two forms, of the essential and the stomachal, in many cases, they are etiologically and clinically distinct.

Diet.—As a *sine qua non* of treatment in severe cases I order the dry diet. Fluids in the form of water, or in intense dyspepsia, a very weak infusion of tea, is allowed in quantities to suit in the intervals between meals. During the hour preceding or the two hours following a meal no fluid is allowed. Soft boiled eggs, lean meat well done, and stale bread, especially the crust of bread, are recommended. Soups, fat meats and fresh bread are, above all, to be shunned. Vegetables in small amount are admissible in cases where there is not a catarrhal state of the stomach, and where the dyspeptic symptoms are more of a nervous character.

In the catarrhal condition Carlsbad salts in the morning, and five or six drops of muriatic acid after meals; in the nervous variety of dyspepsia, Fothergill's pills (strychnia and ipecac) do good service. It is sometimes astonishing to see under such a régime all the vertiginous symptoms disappear, as if by magic. I have known cases in which the beginning of this plan was marked by the absolute disappearance of the whole trouble, to make its reappearance only when the patient thought that he might return with impunity to his former habits of eating and general mode of living.

Clothing.—If there is any affection in the whole range of nosology peculiarly more influenced than another by variations of temperature, it is essential vertigo. Colds play even a more important part in bringing on a fresh attack than they do in cases of nephritis in aggravating the disease. This is easily understood by taking into consideration the vaso-motor nature of the disease, and the fact that exposure to sudden changes of temperature is the most fruitful cause of disturbing the vaso-motor centres, both general and local. Hence the great importance of proper clothing, upon which not enough stress can be laid. Wool is that material which offers the best safeguard against the sudden changes in the atmosphere. I recommend, therefore, to my patients the substitution of the woolen shirt to the fashionable white shirt. This, as it leaves the laundry with the starched bosom, is an abomination and an opprobrium to common sense. Impermeable like rubber, it puts a considerable portion of a person's body under the same disanvantages as the latter material does when used as wearing apparel. I am not an advocate of the cranky notions of certain fanatical dress reformers, nor do I believe in any specific virtue of wool, but if we look around us we will observe that those persons who, in consequence of their occupations, are most exposed to the changes of temperature, shun cotton and linen almost instinctively. In the Rocky Mountains the woolen shirt is worn almost to the entire exclusion of the cotton and linen shirt. I would not insist upon this point, which to some may appear a trifling one, were I not firmly convinced that it is often overlooked and ignored, and that vertigo cannot be successfully treated without a strict attention to a rational mode of clothing.

Alcohol.—The great palliative remedy is alcohol. Without it the difficulty of treating vertigo would be a considerable one. The effect is usually prompt and uniform. It not only puts a stop to the vertiginous sensations, but reassures the patient and prevents or does away with the usual psychical depression. I need hardly remark here that over-indulgence in this affection of necessity leads to more baneful consequences than in almost any other. As a curative agent, too, it is of paramount importance. There is scarcely a case of vertigo in which I do not prescribe the moderate and strictly regulated use of whisky, as a rule from 1½ to 3 ounces a day. Owing to the great danger of stimulants in the neurotic, and to the fact that they often jump right into confirmed inebriety, great discretion must, of course, be exercised in its administration.

The Bromides.—The bromides, in 30 or 40 grain doses, especially when combined with the valerianate of ammonia, are very serviceable. In cases accompanied with irritability of the heart they are almost indispensable. The action of the drug is probably similar, but perhaps superior, to that of quinine. Its well known power of steadying the ganglionic cells in the spinal cord, and increasing their resistance to peripheral afferent impulses, thus checking and controlling reflex movements, is equally well observable in vertigo, where it exerts a regulating influence either on the vaso-motor centres or on the equilibrial ganglionic cells direct. Digitalis, which I employed in cases where the irritability of the heart was very marked, never gave satisfactory results as to the vertigo, and often made it worse, although it did mitigate the heart symptoms. Arsenic, as a general nerve tonic, has a good effect where the gastric disturbances are slight or absent.

Iron.—Since almost all vertigo patients are more or less anæmic, it would seem, *a priori*, that iron is indicated in the treatment. It is not well borne by these patients as a rule, and is apt to do more harm than good. I discontinued it in all cases in which I yielded to the temptation of trying it. Aside from its tendency to aggravate the dyspeptic troubles, and thus adding to the peripheral disturbances apt to produce vertigo, it seems to influence the vaso-motor centres in a direct way, inciting them to perverted action.

Quinine is almost, if not entirely, as efficacious in temporarily preventing or dispelling vertiginous attacks, whatever their cause may be. A judicious use of this drug may accelerate a cure considerably, not only in cases of malarial origin or complication, but also in the forms of essential vertigo, pure and simple. Quinine, in spite of its tremor producing qualities, seems to have the power of steadying the vaso-motor, and perhaps the equilibrial, centres, as is shown by its great value in the treatment of that most uncontrollable of all forms of vertigo, Menière's disease.

Electricity.—From the fact that vertigo, objective as well as subjective, may be produced by passing a galvanic current through the brain, the patient experiencing some or all the symptoms of essential vertigo, cerebral and especially sympathetic nerve galvanization suggested itself at an early date of electro-therapy. But the results of competent observers have not answered to their expectations. Moriz Meyer, probably the most enthusiastic author on electro-therapeutics, does not mention in his treatise a single case of vertigo treated by electricity. Erb had negative results. Beard and Rockwell saw vertigo arise from faradization of the cervical portion of the sympathetic. Acting on the anatomical fact that the cerebral vessels are innervated by the sympathetic fibres starting from the superior and inferior cervical ganglia: acting, furthermore, on the physiological experiment that the medium pressure is due, according to G. Fischer, for the most part to an irritation of the vagus and sensitive nerves, and assuming, finally, that vertigo is due to a disturbance of intra-cerebral circulation, the most rational procedure would, indeed, seem to be the application of the electric current to the cervical sympathetic. But there exists the well known difficulty of applying electricity to the nerve without, at the same time, affecting the depressor nerves of the vagus, the brain itself, and the spinal cord. After having seen some very unpleasant symptoms arise, such as increased vertigo and threatening syncope, I like others, abandoned galvanization in the treatment of vertigo. In one case which recently came under my treatment I obtained a surprising result with static electricity, the electric wind, so-called. Here a status vertiginosus which had lasted for more than two weeks, and had refused to yield to the usual remedies, the first application gave prompt relief and the patient improved rapidly on the continuation of the treatment. I will say, however, that the patient, who was a strong believer in electricity, and who took at first sight a deep interest in my static machine, had suggested the remedy himself, and his implicit faith may have played the principal part in his cure.

Traveling.—If all remedies have been exhausted, if the patient has found that the most diverse plans of treatment and a host of remedies have failed to give him relief, he is generally told by his physician or friends to travel, and to try this or that watering place. But as a rule it will be found that neither benefits him, and he returns home more vertiginous and disheartened than ever. The excitement incident to travel, the crowded depots of large cities, the whistling of locomotives, the jarring on the cars, the irregular meals and improper food, will, together or separately, deleteriously influence the nervous system of the sufferer. It is true that very often home influences which are constantly at work, petty annoyances, insignificant in themselves, but cumulative in their action, will prevent the patient from getting well. Business cares will, of course, be particularly prejudicial. Under such circumstances separation from home, a sojourn on a farm, a monotonous, solitary, and simple life will have the same beneficial effect on vertigo as on some forms of hysteria.

Decidedly injurious is warm bathing. Hence it is one of the most baneful mistakes for vertigo patients to try the effect of Hot Springs, as is often done in this part of our country. I do not know of any form of nervous disease which could possibly be benefited by warm bathing except those depending on a rheumatic diathesis. Much more rational is the use of cold bathing and of cold springs, although it is not the intrinsic remedial value of the water as such, but the employment of hydro-therapeutic measures in general, that is apt to work a favorable change in the patient's condition. Cold water and pure air are among the most powerful remedial agents to control vaso-motor disturbances, to calm and cure those forms of neurasthenia of which they constitute the predominant symptoms. Hence the discreet use of cold water ablutions, followed by gentle rubbing, and sleeping with the windows open, are prerequisite for success. That a fanatical abuse of these measures will have the contrary effect, is unnecessary to say.

Massage, the fashionable hobby and cure-all with some neurologists of the present day, was never, in vertigo, followed by any conspicuously good results in my experience.

From the fact that in some cases of injury and suppuration vertigo is suspended, the conclusion is justified that a seton may do good. I never tried this remedy.

Prognosis.—Life is rarely compromised by essential vertigo, and some patients grow old with it. Yet it cannot be denied that the often-repeated alarm experienced by the patient may set up psychical and physical ailments of greater or lesser gravity. On the whole it may be said that, as in neurasthenia in general, the prognosis is good *quoad vitum*, but dubious *quoad valitudinum completum.* An ominous symptom is loss of memory and confusion of thought. These are symptoms, however, that are not frequently met with in the vertigo under discussion.

Those cases are most promising of success in which malaria is the proximate cause, although vertigo thus induced may last for years even after the disappearance of all malarial symptoms. When the stomach keeps in a fair condition the prognosis is also favorable. It would be a comparatively easy task to successfully combat vertigo were it not for the fact that we have, in most instances, to deal with bad habits (alcohol and tobacco), unwholesome surroundings and adverse circumstances of a social or financial nature.

However complete the success of treatment in a

given case may seem, there always remains a tendency to relapse. Like the sword of Damocles, vertigo hovers over the head of the predisposed, ready to descend on its victim when least expected.

SALICYLATE OF AMMONIUM IN THE TREATMENT OF TYPHOID AND SEPTIC FEVERS AND INFLAMMATIONS.[1]

BY J. R. BARNETT, M.D.,

OF NEENAH, WISCONSIN.

For some two years I have been employing the salicylate of ammonium in some of the affections in which we have been accustomed to place our main reliance upon quinine, and I desire to submit the results of such experiments and my own conclusions.

Before doing so it may not be amiss to speak of the leading motive of such an investigation; its development, step by step, will appear later on. Briefly, the inadequacy of quinine in typhoid and remittent fevers and other grave affections to which it is commonly addressed, nay, its not infrequent harmfulness, raised the question in my mind years ago, whether it were not desirable to supersede it as an antipyretic by some other of at least equal power and free from its disadvantages and dangers. That many physicians have entertained the same question is amply attested by the multitude of substitutes that have been submitted during the last few years, some of them of the cinchona series and closely allied to quinine, as if it were not safe to get far away from the parent tree others derivatives of coal tar, as if it were better to get entirely away, and still others quite remote from both.

I speak of typhoid and remittent fevers together, not from their pathological but from their clinical relationships. The former would involve questions outside the scope of this paper. Still I may remind you of the spirited discussion of this question by this society three years ago, which settled only one thing clearly, which was that the typhoid of one observer was quite liable to be the remittent of another, and *vice versa*, the treatment of both, however, displaying the closest similarity. It seemed to be the general experience that cases of fever possessing all the clinical features of typhoid often occur side by side with those distinctively remittent, and that the two classes shade so insensibly together as to puzzle the most experienced in making a differential diagnosis. It is this clinical relationship of those fevers which renders the name "typho-malarial" convenient if not accurate, and which justifies the rather narrow line of routine treatment addressed to both.

For my purpose it is not necessary to particularize this, but to refer only to the one indispensable agent, quinine; indispensable because few physicians had the hardihood to disregard the canons of the Fathers which required its use, whatever they did with the collateral treatment that might be associated with it. I felt myself so bound for years, an unwilling subject, for it was my fortune to see but few cases where the quinine treatment was of marked benefit, while I saw many in which it did unequivocal harm as long as its use was persisted in. I never knew it to abort the fever, given in any safe quantities and at the earliest moment. It never distinctly shortened it, at whatever stage its administration was begun, in whatever quantity given, and to whatever length of time. Given early it often seemed to hasten the occurrence of delirium and adynamia, and to accentuate the character and degree of each. Dryness of the mouth and sordes, absent before or slight in degree, would promptly follow its use, irrespective of its effect upon temperature, which was by no means uniform, and the more distinctive typhoid phenomena later on would be favorably modified only exceptionally, and then, as it would usually seem, only when these phenomena approached those of a genuine septicæmia. I am far from saying that there is no stage or condition of those fevers where quinine can be employed with tolerably uniform advantage, but that it is seldom found earlier than the end of the second, or the beginning of the third week and, except in sepsis from intestinal lesions, only in tonic doses.

The antipyretic salicylic acid and its salts, so fortunate in their earlier application, raised the extravagant hope that at last something approaching a specific in fevers had been discovered. Their experimental use, as such, became so general as to at least demonstrate the general belief in the inadequacy of former remedies; but, unhappily, it failed to convince the profession that anything better had come to take their place. Such experiments were generally, if not always, limited to the acid and its salts of soda and potassa. Generally the soda salt was the one used, doubtless because of its superior success in the pyrexia of rheumatism, and because of the general acceptance of the theory that both the acid and its different salts are at once changed in the system into the sodium salicylate. Some still adhere to this as superior to the classical antipyretics, a conclusion which my own experience with it does not sustain.

At the meeting of the American Medical Association in Washington, Dr. S. K. Jackson, of Norfolk, Va., submitted a paper on the "Ammonia Treatment of Typhoid Fever" remarkable in its record of successful cases, and still more so for the startling theories of the author concerning the pathology of the disease and the rationale of a successful treatment. Forgetting these theories—vagaries, I had nearly said—and remembering only their substantial fruits, because in harmony with what I had myself recently observed, I was, and still am convinced that his paper was the most valuable contribution to the therapeutics of typhoid fever that has appeared in recent years. The ammonium salts he employed were the nitrate, the acetate, the carbonate and the hydrochlorate, each in its appropriate stage of the fever, and in its well marked indications, and he did not hesitate to affirm that, one and all, they constituted the sole necessary treatment.

The year before this paper appeared I had seen a

---

[1] Read before the Wisconsin State Medical Society, at its Annual Session, June, 1886. From report of Committee on Materia Medica and Therapeutics.

number of cases of an exceedingly malignant type of the fever in consultation with a medical friend. Five adult members of a family had been stricken in succession; three had died, and the other two seemed in the last extremity. One of these had intercurrent pneumonia and gangrene of the lung. The treatment had been strictly orthodox in all particulars, in one case embracing the cold pack and cold affusion, with free alcoholic stimulation in all. In the remaining two cases it was determined to discard all former remedies with the exception of opiates in moderate quantities, and to rely upon the carbonate of ammonia for stimulation, as advocated by Stokes. These cases recovered.

Two years ago quite an endemic of remittent fever occurred in Neenah, the malady often assuming a distinct typhoid type, attacking several members of a family. Two of my earlier cases died under the classical treatment. My own son, a lad 8 years old, sickened and rapidly grew worse until his condition became grave in the extreme. I dared not depart from the old ways with him, although a trusted colleague and friend was in almost hourly attendance during the worst. I felt bound to them by fear and hope until the last moment. There were suppression of urine and uræmic coma in his case, and I feared to give carbonate of ammonia as a stimulant, for has it not been said that uræmia is not *ur*æmia, but ammonæmia? Moreover, as a condition consequent upon this, there was œdema of the lungs, and surely I could give ammonia only at peril of strangulation. At last in desperation I administered it cautiously, 2 grains every two hours. It did no harm, but it seemed to do no good, and the time shortly came when it seemed to my faithful colleague that the boy was dying. His extremities were cold; his finger nails were blue, his lips livid, his face leaden, and the rattle that precedes death was in his throat. Death seemed inevitable and imminent. But he was my only boy, and I had the desperate courage to strangle him if need were, in the frantic effort to do something for him as long as he should live. I gave him the ammonia every fifteen minutes, with what difficulty you can imagine. The boy lived, but had he been any other on the wide globe, and under my care, he would have died.

This is how I came to venture upon the ammonium treatment of typhoid fever. But I also ventured upon a radical departure at the outset. I reasoned that the rational remedy must be the ammonium salicylate, for reasons which need be only alluded to. Its germicidal properties, possessed in common by all salicylates and its antipyretic and antiseptic powers, would at least give promise of effectiveness in modifying if not aborting the course of a fever. It would certainly avail in hyperpyrexia, it ought to fortify against systemic contamination from intestinal ulcerations, and whether or not it were to be decomposed in the body, and thus produce a nascent ammonium carbonate, it should, in common with all ammonium compounds, serve as a stimulant, which could be strengthened at will by the addition of ammonia in excess.

I had cases enough for a guarded, and finally a confident trial. In the first one, that of a young man with all the symptoms of commencing remittent fever, I had the good fortune to be called on the first day of high temperature, 104°. A drachm of the ammonium salicylate in divided doses brought this down to 100° within twenty-four hours. A day later he was out on the street. Several similar cases followed at intervals, with the same result, so that I saw them but two or three times. Often patients with prodromic symptoms of fever would call at my office, and after prescribing I would lose sight of them and not learn the result. Probably this was not uniformly good, and it is within the bounds of possibility that not all of them needed medical advice. I saw some others where the same opportunity for abortive treatment presented, but without the same happy result, although a mild run of short duration was secured in all. Others, seen perhaps after a week of fever, ran the usual course with a medium temperature, with general symptoms of extreme mildness, and with uniform recovery. Two only reached the danger line, passing perilously beyond, but they also got well. Several of these cases were complicated with pneumonia. To them I gave the remedy with ammonia in excess, as I also did to the grave cases already mentioned. Some of them received a small Dover's powder two or three times a day, but there was far less frequent need of it than there usually seems to be. Of all of them, and of others occurring subsequently, only the two seemed unresponsive to the treatment. Most of them answered surprisingly, and all of them satisfactorily. The effect upon temperature was very uniform. Not seldom this was found as high as 105° at the beginning, but whether high or moderate at this stage, it nearly always came down promptly to 100°, to reach normal within a day or two more, in cases recovering at this point, and varying from 100° to 102° in cases reaching the third week.

A case of puerperal septicæmia occurred about this time, developing pelvic cellulitis and pneumonia. The latter seemed to involve one entire lung and the base of the other. The temperature when those complications arose was 106°. The patient's pulse was feeble and irregular, her face livid. The prognosis was grave enough. A drachm of the salicylate of ammonia given through the night reduced the temperature to 101°, and it never rose but one degree higher. The patient's recovery was rapid and complete. Excepting digitalis the salicylate was the only remedy given, opium being contraindicated by the deficient and labored respiration.

The next case of the same nature, without the pneumonitis, did not fare as well. Her temperature was 104½°, but it fell off three degrees within twelve hours. Twelve hours later it remained the same. The patient looked and felt so comfortable and well that I told her that I would wait to hear from her before calling again. Two days later I was sent for to find her as bad as ever. She had felt so well that she thought it unnecessary to renew her medicine after it was all taken. I directed an immediate return to it, but it did not avail. She grew rapidly worse and died a few days later. I have never felt wholly

blameless for this death, although recovery might have been immpossible at best.

Something like a dozen cases have come under my care since, including those, a majority, following early abortions. In nearly all, cellulitis was present; in some peritonitis and in a few inflammation of the lung or pleura. With one exception they all recovered promptly, and this one after a dangerous run of more than two weeks. In all of them a prompt reduction of temperature followed the administration of the salicylate, with or without the help of opium, and nearly always without the use of the hot or the antiseptic injection.

In ordinary attacks of pelvic cellulitis, arising often from indeterminate causes, all of the salicylates have proved of value, and are probably unsurpassed by other remedies.

A case of gangrene of the lung following entire hepatization of one side came to my care in the second week. I employed quinine with the ammonium salicylate, but several times tried the effect of suspending one and then the other of the remedies. The quinine was not missed, but high temperature and hectic ensued when the salicylate was omitted for even a few hours. Whisky was also given for prudential reasons, as the patient had been a hard drinker. He recovered completely and is still, after nearly two years, in excellent health.

In a case of pulmonary gangrene attending tuberculosis the salicylate proved far superior to all other agents, but, of course, could not avail to save life. Death by asthenia was evidently deferred for many weeks, the patient's comfort being promoted unmistakably.

In the septicæmic state of the last stage of tuberculosis it has often mitigated the fever and other distressing symptoms where quinine failed or could not be borne. It has even served to lessen the cough, or at least to promote the action of other agents addressed to that symptom.

Its favorable effect in the pneumonitis complicating other affections, led me to employ it in idiopathic pneumonia, as its indication was also clear from the well-known benefit of both the chloride and the carbonate. In all these cases a varying excess af ammonia was given. They all terminated in recovery after the usual course, characterized, however, by unusual mildness. It is not to be forgotten that pneumonia is a self-limited disease, with a tendency to spontaneous recovery. Nevertheless, recovery does not always occur, and sudden death from embolism is an event of sufficient frequency, even among cases of a mild character and with a hopeful prognosis. Bearing in mind the possibility of this accident in all cases, we may turn with favor to any agent that promises to guard against it more effectually than those hitherto employed, and this, it seems to me, the ammonium salicylate does. With me it has largely superseded all others except opium.

Since beginning this paper last week I have been afforded the opportunity of employing it in the high temperature of cerebral meningitis. I used it because two recent cases of the same age ended fatally under the customary treatment. This one, a child 4 years old, had been ill a day, with intense headache, delirium, and almost constant vomiting. Her temperature when I first saw her was 105°. Three grains of the salicylate every hour and a half or two hours, and the ice-cap to the head, reduced this four degrees by the next morning. The vomiting was greatly lessened, but delirium was more pronounced and constant. The pupils were contracted and insensitive, and the urine was discharged involuntarily. The temperature rose one degree during the next day, then fell to normal, when it seemed that convalesence was assured. But this hope was illusive. On the sixth day the temperature rose suddenly to 103½°. The ice-cap, which had been left off for two days, and the salicylate, which had been practically abandoned, were restored, with the effect of reducing the temperature to 101 and 102°, between which points it still—on the eighth day—vacillates, while there is absence of delirium and a general condition which affords a very favorable prognosis.

A case in which I gave the salicylate through an initial error in diagnosisis will serve to point out one of its probable dangers. It was that of a man about 35 years old, who was taken with chills and high fever, severe headache and uncontrollable vomiting. It seemed to be a commencing remittent. He lived a long distance in the country, and as it was late at night I gave such remedies as I had with me and prescribed the salicylate of ammonia for the next day. The next evening I found him in a semi-coma, with urine suppressed, and all symptoms of the gravest omen. Then I elicited from his wife a history of Bright's disease of some two years' duration, and discovered, when too late, that this was an acute exacerbation. It is presumable that the case might have ended fatally under any treatment, but I am inclined to think that the action of the agent employed was unfavorable, and now I should never give it when there were undoubted renal lesions, either acute or chronic, and should watch its effect with solicitude where there was a tendency to anuria from any cause.

In concluding this report I desire to say that I have not attempted to present to this society a panacea for the various affections it enumerates. Probably this will never be discovered. But I fully believe that the results already obtained will justify further investigations upon a much larger scale. My own cases have been far too few to establish definitively the superiority of the salicylate of ammonia, in the line of treatment to which it has been addressed. The clinical material afforded by a country practice during so short a period is necessarily too limited. Still, it does not seem too much to say that the following conclusions may be provisionally accepted:

The salicylate of ammonium is to be ranked among the most efficient of the antipyretics.

As an antipyretic in all fevers characterized by extreme adynamia it ranks among the safest, owing to its ammonium base.

It is stimulant as well as antipyretic, and thus of itself fulfils indications otherwise only met by a combination of remedies.

It is an agent of wide germicidal powers, being promptly efficient in affections of great etiological

and pathological differences, each confessedly arising from its own proper specific infecting micro-organism.

As a remedial agent in typhoid and remittent fevers it is unsurpassed, aborting them at the outset, under favorable conditions, and greatly mitigating their severity and danger under circumstances less favorable.

It is entitled to confidence in the treatment of pulmonary inflammations, either idiopathic or septic, and probably eliminates the dangerous factor, embolism, with greater certainty than any other prime curative agent.

It is the most efficient known remedy in puerperal septicæmia and probably also in most septic inflammations of non-puerperal origin.

It is worthy of a trial in non-tubercular cerebral meningitis, as it gives some promise of relief in an affection which has hitherto resisted, if not resented all modes of medical treatment.

Since the submission of the foregoing report the clinical material at my disposal has enabled me to fortify its conclusions by additional data.

The case of cerebral meningitis referred to recovered completely, partial deafness, however, continuing several weeks.

Another case convalesced at end of second week, the symptoms during four or five days denoting great danger. Among the earlier of these were repeated convulsions. In this case the ice-cap could not be employed, and evaporating lotions had to be used instead; which, it seemed to me, could have afforded but little help to the constitutional treatment, either in the control of the cerebral circulation or the high temperature.

Some twenty five or more cases of typhoid or allied fevers have been under my care during the present autumn. At least this number, had they been left uninfluenced by medical treatment, would have pursued, with substantial fidelity to the clinical history of these fevers, the usual course.

With one exception they were subjected to the salicylate of ammonia treatment only, and uniformly without alcoholic stimulation, and with the exception noted they all recovered. Of these cases all were convalescing by the close of the second week. To speak more definitely, three showed entire absence of fever on the twelfth day, three more on the ninth; all the rest were convalescent at the end of the first week or earlier.

The case in which the ammonium treatment was not strictly adhered to died on the ninth day of the fever, two days after the occurrence of an enormous nasal hæmorrhage. Epistaxis had occurred several times before I saw the case, and it was an almost daily phenomenon throughout. Thinking that the salicylate of ammonia might contribute in some degree to the existing hypinosis, I substituted quinine for it, without, however, improving this condition in the least. The prognosis was extremely favorable up to the day of the severe hæmorrhage. After this the decline was phenomenal in its rapidity.

In the cases recovering after but few days of fever there was, not seldom, a tendency to relapse or return of high temperature, where the antipyretic was prematurely withdrawn. It seemed analogous to the recrudescence of rheumatism frequently observed in the too early abandonment of salicylic acid. I soon learned from them the necessity of continuing the remedy in reduced quantity and at lengthening intervals during several days of normal temperature. With this precaution, when the fever leaves it ends definitively.

MEDICAL PROGRESS.

PASTEUR AND FRISCH.—Among the vast number of criticisms to which M. PASTEUR'S prophylactic treatment of rabies has been subjected, none has been more often repeated than the contention that in attempting to treat human beings after the infliction of the bite, he was going beyond the warrant afforded by his experiments on dogs. M. Pasteur had indeed said that even when he inoculated the first human being, on July 6th, 1885, he was not performing an experiment entirely new to him, but there was a great deal of obscurity on this point, and when Frisch, of Vienna, published certain experiments tending to show that dogs could not be protected by inoculations made after infection by trephining, many writers were ready at once to draw the conclusion that M. Pasteur's method was not applicable to human beings, who, of course, would never be inoculated except after a bite. In his paper at the Académie des Sciences on November 2, M. Pasteur admits that Frisch's results are correct, but does not accept the conclusion that his method in its application to man, is thereby put out of court. With, perhaps, a truer scientific instinct than has been shown by his critics, he at once proceeded to vary one of the terms of his experiment; he altered the method of inoculation so that the protective influence, if such existed, might be earlier exerted. With this object he began the preventive inoculations on the day following infection, and repeated them rapidly, so that the whole series of cords was used in one day, instead of during a week or ten days as previously; then on the next day the treatment was recommenced, and inoculations made every two hours; the course might even be repeated a third time. In this way M. Pasteur has succeeded in preventing the development of rabies in dogs inoculated with virulent material by trephining. "The success of the preventive inoculation of animals after infection by trephining, depends," he says, "on the rapidity and the intensity of the vaccination."—*British Medical Journal*, Nov. 13, 1886.

NEW METHOD OF DILATING THE UTERUS.—DR. VULLIET, professor in the Medical Faculty at Geneva, communicated at the meeting on April 6, 1886, of the Academy of Medicine in Paris, his new method of dilating the uterus, and its application in the diagnosis and treatment of uterine disorders. The following is a summary of the communication. His method (1) renders possible the direct inspection of the whole uterine cavity; (2) permits the dil-

atation to be continued whatever, be its degree, as long as desirable and necessary; (3) affords at the same time the most efficient antiseptic dressing. Professor Vulliet dilates the uterus by plugging the cavity with iodoform tampons, which he leaves. Eight to ten pluggings, repeated every two to eight hours with gradually enlarged tampons, will on the average suffice to render visible the cavity, the patient being in the genu-pectoral position. A dilatation of sufficient degree as to open to view the whole interior, facilitates the diagnosis and treatment of all affections of the cavity. Professor Vulliet has employed it in the treatment of cancer, of submucous and parietal fibro-myomata, and of chronic endometritis. He has obtained, within eight months, complete cicatrisation in four cases of uterine cancer, and is hopeful about these local cures. Time, however, must prove whether they be permanent. In parietal fibro-myomata, this method, without endangering the layer of tissue which separates the tumor from the cavity, permitted incisions to be made in order to transform the parietal neoplasm into an easily removable polypus of the cavity. In endometritis, the dilatation facilitates the scraping of the mucous membrane by means of the curette, and a consequent energetic typical treatment. Without pushing dilatation to its extreme possible extent, Vulliet's method will prove very useful on account of the long duration of the dilatation, and that especially in strictures and deviation of the cervical canal, and in all operations which require the repeated and frequent introduction of the finger or of larger instruments. Moreover, this method—by its very principle, the plugging with antiseptic substances—is applicable in every case in which virulent processes are evolved in the uterus—viz., puerperal, catarrhal, and blennorhœic infections. Professor Vulliet, requested by M. Léon Labbé to demonstrate his method in the Hôpital Beaujon, succeeded within twenty-four hours in dilating the uterus sufficiently to permit full inspection of the fundus. He has since frequently operated after his method for cancer of the uterus in private practice, and, by invitation, in several hospitals.—*London Medical Record*, October 15, 1886.

ANTAGONISM BETWEEN ATROPINE AND MORPHINE.—At a recent scientific meeting in Berlin, HERR LENHARZ, of Leipsig read a paper (*Prager Med. Wochenschr.*, No. 42) on the alleged antagonism between atropine and morphine, considered both clinically and experimentally. He had come to the conclusion that no such antagonism existed, for the following reasons: Firstly, the antidotal doses of atropine have far too wide a range. As a rule, enormous doses are given, often without success, while, at the same time, recoveries from morphine-poisoning are recorded after merely nominal doses of atropine (.015 grammes, and even less than this); secondly, the uncertainty of the indications. Johnston, of Shanghai, would resort to atropine in all cases, in spite of a weak irregular pulse, whilst Wood makes the condition of the respiration the criterion, and Binz discards the use of atropine if the pulse be rapid and small; finally, atropine does direct harm. Binz had recommended atropine on experimental grounds, but Binz's experiments had not been sufficiently complete, that is, only enough morphine had been given to make the animals sleep, but not enough to give them convulsions. Animals killed by large doses of morphine did not die from lowered blood-pressure, nor from embarrassed breathing, but from the exhausting convulsions. Of 132 cases of morphine-poisoning, collected by the author, fifty-nine were treated with atropine, with a mortality of 28 per cent.; of the other seventy-three only 15 per cent. died. In eight experiments with morphine on animals, atropine made no difference—the animals died just as soon as without it.—*British Medical Journal*, November 20, 1886.

CAFFEINE IN HEART DISEASE.—DR. OTTO SEIFERT (Würzburg) undertook, in the course of last year, a series of researches on Citrate of Caffeine. All the patients to whom he administered it were suffering from organic affections of the heart with imperfect compensation. In one case there was chronic nephritis, with generalized œdema. The caffeine was given in seven cases, sometimes in repeated doses, in others all in one dose. According to Lepine, the daily quantity should be from 1 to 2 grammes. The principal advantage which has been claimed for it is that it quickly improves the action of the heart and regulates the cardiac beats. It is also a diuretic, and has no cumulative action. One to 2 grammes of caffeine should be given in twenty-four hours. Opinions as to the value of the drug are conflicting; the principal drawback to its use seems to be that, owing to its speedy elimination, its action only lasts for a short time. In those cases where compensation has been reëstablished, the action of caffeine may be as prolonged as that of digitalis. The general condition is influenced in a striking manner; the palpitations, the dyspnœa, and, as a rule, the insomnia also rapidly disappear.—*British Medical Journal*, November 20, 1886.

LANTANIN, a new alkaloid with antifebrile properties has been discovered and examined by Buiza and Negreta in Lima. It is obtained from a verbenaceous plant, *L. Brasiliensis*, and its effects are retardation of the circulation and tissue-changes, and considerable lowering of the temperature. It is well tolerated where quinine cannot be taken, and in doses of 15 or 20 grains daily cured 95 per cent. of intermittent fever cases treated by it.—*London Medical Record*, October 15, 1886.

CHLOROFORM has been found very efficient against tapeworms, Doses of 2 grammes have been given, repeated after twenty or thirty minutes, but troublesome cardiac symptoms may be avoided by giving much smaller doses (a few drops) every few minutes for a few times. Thompson successfully prescribed chloroform ℥j. (by weight), simple syrup to ℥j., to be given in three doses, at intervals of two hours, in the morning, fasting, with castor-oil to follow.—*London Medical Record*, October 15, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, DECEMBER 11, 1886.

FIBRINOUS OBSTRUCTIONS OF THE VASCULAR SYSTEM.

It is now thirty-six years since DR. B. WARD RICHARDSON revived the neglected study of diseases in which the circulation is arrested by what the older authors called "polypi," and which we term fibrinous deposits. In the last number of *The Asclepiad* Dr. Richardson again calls attention to this clinical condition in a paper entitled "Some Practical Notes on the Diagnosis and on the Ammonia Treatment of Fibrinous Obstructions in the Vascular System."

In regard to the diagnosis, Dr. Richardson says that in at least eighty per cent. of the cases he has seen that the seat of obstruction has been in the right cavities of the heart; in eleven per cent. the obstruction has been in the large veins, the iliac and the femoral; in six per cent. the obstruction has been on the left side of the heart; and in three per cent. the symptoms of obstruction were simulated—"they were hysterical in character, and although very embarrassing, were not cases presenting the really dangerous indications of vascular obstruction. The diseased conditions under which obstruction takes place in the right cavities of the heart are usually acute and are what is commonly called inflammatory. They are cases of puerperal fever, surgical fever and erysipelas, pneumonia, croup, diphtheria, peritonitis, septic fever." All his acute cases, constituting the large majority of the whole series, may be included under this group, with the exception of one case, which occurred during the later stages of pregnancy, without any preliminary stage of inflammatory character. "In the acute inflammatory cases the symptoms indicating obstruction from fibrinous separation on the right side of the heart are usually rapid in the manifestation. They may be reduced to the following seven indications: 1. Apnœa. 2. Fulness of the veins. 3. Failure of the arterial pulse. 4. Reduction of animal temperature. 5. Pallor of the general surface of the body. 6. Collapse of the physical and mental powers. 7. Symptomatic physical signs."

Taking these symptoms in order, the first, which is subjective and objective, and most apparent and distressing, is apnœa. the want of breath—a breathlessness with open air passages, with perfect freedom from pulmonary obstruction, and with freedom of respiratory mechanism; and to this condition Dr Richardson has given the name *cardiac apnœa.* It is not due to the failure of the air to reach the air-cells of the lungs, but to the fact that the blood does not reach them in sufficient quantity, and the respiratory effort is made to no efficient purpose, since the blood is arrested on its way to the lungs through the right cavities of the heart. The respiration is rapid, heaving, and sighing, and the patients, when they can describe what they feel, always refer the difficulty to the heart: in the words of a patient: "I can breathe freely enough, but it does me no good." The second symptom, fulness of the superficial veins, is especially seen in the veins of the neck, and sometimes in the veins of the extremities. If one of these veins be compressed by the fingers it does not fill more than it is already filled on the side farthest from the heart. We know that this is a useful point in the diagnosis of other forms of disease, but in these cases it is singularly characteristic, as showing that the right side of the heart cannot freely receive the blood which should flow into it. In some cases the observer may detect a regurgitant movement of the blood in the veins of the neck. In this connection we may refer to the editorial article on "Hepatic Pressure, and the Condition of the Right Side of the Heart," in THE JOURNAL of July 24, based on an article by Dr. W. Pasteur in the *Lancet*, of May 15, 1886, in which he shows that in cases which give evidence of great over-distension or failing compensation in the right heart, there is a distension or over-filling of the external jugular veins, apparently from below, with or without pulsation or undulation, which takes place when pressure is exerted in the right hypogastric or epigastric regions with the flat of the hand, the direction of pressure being backwards and upwards.

In regard to the third symptom, failure of the arterial pulse, it may be quick or slow, but it is always thin and feeble; and except at the time of death it is rarely, if ever, intermittent or ir-

regular. This peculiar pulse is all the more noticeable as the action of the heart is often forcible, and even bounding, from the fact that the heart, though contracting on a diminished current, is excited by the pressure of the semi-fluid, mass which is retained in its cavities, into quick contraction. Cardiac overaction with diminished arterial tension thus run together diagnostically in these conditions of life. The fourth symptom, reduction of animal temperature, may take place very suddenly. Dr. Richardson alludes to a case in which the temperature fell from 105° to 98° F. in one hour, and to another in which the temperature was reduced to 96° F. some hours before death. The reduction begins in the extremities, usually in the feet, and extends towards the trunk; though the patient rarely complains of it. We are all, perhaps, familiar with this sudden decline in temperature, to the extent of one or two degrees below the normal when the certain signs of obstruction are fully developed. The *pallor* which overspreads the body is also of a familiar symptom—not a strictly anæmic pallor, but one tinged with a bluish shade, producing lividity. This sign is especially noticeable on the cheeks, where the normal red or reddish color is replaced by the lividity.

The physical and mental collapse is a marked symptom. "The muscular prostration is marked by restless tossing and failure without convulsion. After a time the muscles themselves collapse, the abdominal muscles are drawn in deeply with each respiration, and the power of the voluntary muscles to perform any resolute act subsides. The mental prostration is equally marked. There is no apparent desire to effect anything except to breathe. The mind does not wander, neither does it sleep. A patient who recovered told me she knew everything that was going on all the time, but in such a listless way that she had no real interest in the anxious plans which we were carrying out to save her life, for which listlessness she said, in apology, that 'she hoped she should be excused, because she was only half alive.' To the end of life there is no active convulsion: the mind loses its consciousness before the respiration ceases, and death, when it comes, is usually by a kind of coma, with asthenic or slow syncope." The *symptomatic physical signs* yielded by auscultation are not such as would be at first suspected. Cardiac murmurs are not heard, as a rule, since the soft mass of fibrine acts as a damper or muffler of the sounds produced by valvular tension, or holds down the valves by becoming attached to the cords, and crossing their free margins. The most diagnostic physical sign, then, is a deficiency in the fulness of the first sound in the early stage, to which we must add the differentiation of the sounds proceeding from the two sides of the heart. With a differential stethoscope and a little careful practice one may easily make out this point. "With one mouth of the stethoscope over the seat of the tricuspid, the other over the seat of the mitral valves, we listen for the sound produced by the combined tension; raising the mouth of the tube over the mitral, we find that the sound is all but lost; then putting down the mouthpiece over the mitral, and raising that over the tricuspid, we hear the stroke nearly, if not quite, as perfectly as when both mouthpieces are down in their respective places. "In very extreme cases, the physical diagnosis may extend to the second sound of the heart. The second sound may be differentiated as reduced or lost on the right side. This tells that the coagulum extends beyond the pulmonary semilunar valves; and after death in such instances, the clot will be found impressed with the figure of the valves as distinctly as such an impression can be made on plastic material."

These, then, are the seven distinctive signs, and are sufficient to establish the diagnosis as clearly as any kind of physical diagnosis, as known at present, can determine any diagnosis. But with these there are sometimes certain pulmonary symptoms—exceptional, it is true—which are also strikingly diagnostic. One is a sharp, dry respiratory murmur. The most significant, however, is emphysema, which may be extreme in infants and young children in whom the right heart is obstructed by fibrin. It may be so extreme as to raise up the anterior wall of the chest into a rounded prominent form, almost immobile. This emphysema is "produced by the forcible efforts of the patient to inflate the lungs, at a time when the vascular plexuses surrounding the air vesicles are so deprived of their blood that the balancing blood-pressure is reduced."

We now come to the diagnosis of obstruction of the left side of the heart. The most common positions of fibrinous deposits or concretions on the left side of the heart are the ventricle, the infundibulum, and the ascending portion of the aorta. The general symptoms of this particular condition differ from those of the preceding in many respects: "There is suffocative dyspnœa, with expectoration of mucus, sometimes mixed with blood; the surface of the body is of a leaden color, and the body is cold. The muscular perturbation lapses into powerful convulsions, and coma precedes dissolution. These symptoms may extend over many hours; or, as in the preceding class of cases, they may also occur in a sudden manner. The patient, in moving or making a straining

effort, may suddenly fall back, may be seized with a sudden convulsive fit, and so expire." But the cardiac physical signs of obstruction of the left heart do not differ materially from those found in obstruction on the right side, as regards the systolic and diastolic sounds: "for, if the right side of the heart is free, the two sets of valves on that side are all-sufficient to produce the two sounds; so that a mere reduction in the intensity, or rather the fulness, of the normal sounds, is the only probable modification." But there is a distinction in the action of the heart when the concretion is on the left side: the heart's action is much more violent, irregular and tumultuous. The difference in the physical signs on the part of the lungs is found in the fact that the lungs are not made emphysematous. They are always congested, and the congestion is decided and extensive. The dyspnœa is of the pure pneumonic type, and not the syncopic dyspnœa of the previous condition; the oppression is in the lungs, and is so recognized by the patient.

When masses of fibrin are precipitated in the blood-vessels the diagnosis of the condition may be difficult or very easy. In large superficial vessels like the femoral vein the deposit may be detected by the touch, being felt in the line of the vessel as a firm, large, perhaps knotted mass; the vein is dilated, and pressure, however gentle, usually causes pain. The condition may cause œdema below the seat of obstruction. When such deposit occurs in a vein within a cavity, such as the abdominal, the diagnosis is more difficult; though it may sometimes be felt by careful manipulation when the body is well flexed, and if there be no distension or swelling over it. This deposit of fibrin within the veins is usually sudden, generally occurring in connection with one of the forms of pyrexial disease already mentioned, and especially with fever following parturition. Obstruction on the arterial side of the circulation is evinced by coldness and numbness in the parts from which the blood-supply is cut off, and is usually announced by sudden symptoms, which disappear when anastomosis is established, if the vessel blocked be not of such size as to cause gangrene of the limb below by complete obstruction of circulation.

Dr. Richardson says that his long experience has shown him that the only rational means of treating these cases is by the free use of ammonia, carried to the point of causing re-solution of the obstructing fibrinous masses; and this method was proposed by him in 1854. Alcohol, opium, ether, and other antispasmodics are useless; and he gives the following rules for treatment: 1. The ammonia is best administered either in the form of the strong aqueous solution or of the saturated alcoholic solution. More than five minims at a time cannot be easily swallowed. The best menstruum for the ammonia is milk, and if the milk be chilled by ice the patient takes the mixture with great facility. 2. The ammonia must be relied upon exclusively. Sedatives of all kinds are to be avoided as fraught with danger. Wine and spirits are most injurious; they produce a danger of movement of the fibrinous masses, they excite, and, in time, exhaust the heart. 3. The diet should be, as nearly as possible, of pure milk, with an occasional change to gravy soup or minced cod-fish, with bread or toast. Other solid substances do not digest readily; they create flatulency, and cause a restless movement of the body, which is detrimental. 4. With the medicinal and dietetic treatment thus enjoined there must be combined the most perfect rest of the body in one position. The secret of success consists in producing solution of the obstructing mass while it lies sufficiently out of the course of the circulation. If it loosen from its hold and be carried into the pulmonary artery while it remains semi-solid, however small it may be, it will be a source of fatal danger. 5. Together with this physical rest every mental comfort, must be supplied. The patient must be harassed with no unnecessary fears, agitated by no unnecessary comments. Much of the success of the treatment depends on the gentle firmness with which the practitioner enforces that the greatest advantage is secured by absolute repose of the mind as well as the body. 6. When the secondary changes indicate the solution of the fibrin and its distribution over the vascular system, the administration of the ammonia is not to be withdrawn. The alkali is indeed as important under these circumstances as in those which precede them. 7. The conditions warranting the withdrawal of the solvent are: entire subsidence of the difficulty of breathing; relief of the tension of the veins; returning fulness of the pulse; normal temperature; restored mental and physical power; and steadiness of motion of the heart, with perfect clearness of the sounds. When these favorable conditions are proclaimed it is fair to infer that no obstruction is present in the circulatory canals, and that the ammonia may be withdrawn. But inasmuch as the ammonia, however far it may, with reason, be carried, does no injury that is not quickly recovered from, there exists no cause for hurry in withdrawing it. It may, therefore, be continued in less frequent doses for a few days when every danger appears to have passed away.

MONUMENT TO DR. BENJAMIN RUSH.

Partly by liberal appropriations of Congress and partly by State action, statues and monuments have been placed in the Memorial Hall of the Capitol and in the numerous parks that adorn the city of Washington, commemorative of many of the patriots, warriors, statesmen, jurists, scientists and philanthropists of our country, but thus far no member of the medical profession is found among them. And yet, history shows that the medical profession of our country has furnished examples of as ardent patriots, as brave warriors, as wise statesmen, as profound scientists, and as enlightened philanthropists, as have been furnished from the ranks of any other profession or calling. The defect is not from the want of meritorious names highly worthy of commemoration, but rather from the failure of the profession itself to initiate the movements necessary to secure the proper visible monuments commemorative of their own illustrious dead. Attention was directed to this subject during the annual meeting of the American Medical Association in Washington in 1884, and a Committee was appointed to consider and report some practicable plan of procedure. The Committee, through its Chairman, Albert L. Gihon, M.D., U. S. N., subsequently submitted an interesting report recommending the erection of an appropriate statue of Dr. Benjamin Rush, of Pennsylvania, at an estimated cost of $40,000, the money to be contributed in small sums by members of the medical profession in all parts of the United States. The report was approved by the Association, and the Committee continued, with the addition of one member from each State and Territory, to carry the enterprise to its final completion.

To make the pecuniary interest in the monument as general throughout the profession as possible, the Committee decided to solicit subscriptions of $1 only from each individual, though larger sums will not be refused. The member of the Committee in each State is expected to solicit and receive contributions of the profession of the State or Territory he represents, and transmit the same to the Treasurer of the Committee. The officers of the Committee are Albert L. Gihon, M.D., Chairman; George H. Rohé, M.D., of Baltimore, Secretary; and Joseph M. Toner, M.D., of Washington, Treasurer. When it is remembered that Dr. Benjamin Rush "was not only a great physician, teacher, and investigator in medicine; a philosopher, philanthropist, elegant lecturer and accomplished writer; but also a fearless patriot, a founder of the Republic, a member of the Continental Congress and one of the Signers of the Declaration of Independence, the first Surgeon-General of the Army of the Revolution for the Middle Department and Physician-General of Military Hospitals, and a member of the Convention for the adoption of that Federal Constitution under which we now live," and, of not less importance, a man of pure and Christian life, every American physician should feel a just pride in contributing his *mite* to ensure the erection of an enduring monument to his memory in an appropriate position among the many already adorning the Capital City of our country. Indeed, we think no physician should wait to be called upon, but enclose his *dollar* direct to the Treasurer of the Committee mentioned above.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Nov. 15, 1886.

THE PRESIDENT, EDMUND J. DOERING, M.D., IN THE CHAIR.

DR. LESTER CURTIS read a paper on

THE ABSENCE OF THE PATELLAR TENDON REFLEX,

in which he enumerated a number of cases of persons in apparently good health in whom the patellar tendon reflex cannot be elicited, such being the case with the author himself. He quoted from authors who had made similar observations, and who had also found the patellar tendon reflex present in diseases in which it is not expected. These variations in the presence and absence of the patellar tendon reflex were so frequent that he was inclined to question its absence as an important sign of nervous disease. He believed it to be a sign that had received undue attention.

DR. D. R. BROWER, in opening the discussion, said: I have been very much interested in Dr. Curtis's paper. I have found the patella tendon reflex occasionally absent in health, but very rarely. Since the suggestion was made by Jendrassik that an effort be made to increase the general muscular tension by having the person pull upon the fingers of one hand linked into those of the other, which was brought to my attention about a year ago, I have been able to elicit the patella reflex in healthy persons when otherwise I would have failed. I think it is necessary in doubtful cases that the blow be struck upon the naked limb. I think it is occasionally absent in health, and it has been my habit in teaching to always say in regard to the patella tendon reflex that it is the loss and not the absence—we have first to know that the person had patella tendon reflex before we can regard its absence as pathological. I have taken that view of the matter for a long time.

As to the presence of tendon reflex in locomotor ataxia, the President will remember one of the patients that I saw three or four years ago in whom patella tendon reflex was present and in whom all of the other symptoms of locomotor ataxia were present in a marked degree, and I have met with that condition in one or two other cases. I think that in these cases the degeneration has not commenced in the usual place. At the meeting of the American Medical Association an interesting paper on this subject was read by Dr. Zenner, of Cincinnati, who has made very extensive observations upon healthy people as well as upon the insane, with a view of determining the real value of this sign. And his opinion is in accord with my own, that if all precautions are taken it is a remarkable thing for it to be absent in a healthy person. In the case cited by the author there would seem to be a part of the spinal cord that was not entirely destroyed, possibly enough to admit of the passage of the stimulus from the sensory nerves.

Dr. H. N. Moyer said, regarding the manner of eliciting the patella tendon reflex: Unless very great care is exercised in determining that the reflex is absent the observation has very little value. In testing this reflex I prefer to have the leg rest across the back of the wrist, by which means we easily detect any tension of the hamstring muscles, which greatly interferes with the reaction. As to the manner in which the tendon should be struck, I do not believe that the surface of the ulnar side of the hand is the proper thing to elicit it, and the ordinary rubber hammer is not quite heavy enough for that purpose. The best thing is a steel hammer with a small rubber tip. In doubtful cases care should be taken to percuss the tendon over its entire surface. I have seen a number of cases in which I supposed the patella tendon reflex was absent in undoubtedly healthy persons, but since this new manner of increasing muscular tonicity by lessening the inhibitory power of the brain over the lower spinal centres has been adopted, have never seen a case in which the patella reflex was absent in a healthy individual. There is one other point, in regard to the difference in the amount of the reflex obtained when this procedure is employed and when it is not. There are certain qualitative variations which have not been pointed out. I have under my observation at present two cases of chorea in which there is only the slightest evidence of patella tendon reflex on percussion in the ordinary way, but when the patients are required to clasp the hands and the patella is then struck the reflex is markedly exaggerated. I think in some cases this procedure will enable us to diagnosticate between the neurasthenia of cerebral and of spinal origin. I have one undoubted case of locomotor ataxia in which the patella tendon reflex is present. In the two cases of Westphal which have been recently published, the microscope revealed the morbid processes in the lumbar portion of the cord to be largely confined to the points of entrance of the posterior roots, and also to a slight extent involving the lateral columns. This probably obtains in the cases reported to-night.

Dr. J. J. M. Angear said: I do not know that we can come to the conclusion that our patient is suffering from locomotor ataxia when we find the patella tendon reflex absent. I have in mind a patient who was under my care about two years ago, in whom the patella tendon reflex was entirely absent. There was unsteadiness in gait, a little wavy motion when attempting to stand erect, with eyes closed and feet close together, and the patient walked with a cane. There were symptoms of congestion of the cord, a feeling of a heavy weight at the feet, that peculiar sensation known as girdle feeling, which improved on lying down. The patient improved somewhat under the use of mercury and iodide of potash (I learned afterwards that when a young man he had syphilis, but it has not shown itself since). This was two years ago, and the patient is no worse to-day, but it seems to me that he ought to be a great deal worse if it was locomotor ataxia. If we fail to elicit the reflex by simply striking the tendon, we can get it, if it is present, by engaging the patient in conversation about something foreign to himself and then suddenly strike the tendon. In regard to cases where it is absent in apparent health, I think we should emphasize *apparent*, for we have no positive evidence that the nervous system is in a normal condition in such cases, and I should be a little skeptical with regard to the patient's perfect health if I had taken all the precautions for securing this action and then found it absent.

Dr. Robert Tilley said: I wish to bear testimony to the truth of Dr. Curtis's observations. I certainly have seen a small number of persons that I considered average healthy individuals in whom I have not been able to elicit the patella tendon reflex. I have not caused the patients to bare the leg, but I have employed other devices to satisfy myself that if the tendon reflex was not absolutely absent it was certainly diminished in its activity. I would like to emphasize the fact that it seems under certain circumstances to be obtained when struck upon one side or the other when it cannot be obtained by striking the tendon in the centre. On several occasions it has struck me as desirable in post mortem examinations to have a microscopic examination of the tendon itself, and see if some peculiar changes might not be visible in it. I would ask Dr. Curtis if he knows of any histological investigations in that direction. I recently saw an article giving an account of a case where the tendon reflex seemed to be absent, but on the administration of a small dose of morphia it was elicited. No mention has been made of what may be called a normal tendon reflex, although the exaggerated form has been referred to, and I do not know whether any one here would venture to give a definition of a normal tendon reflex in opposition to an exaggerated one. I am certainly disposed to take exception to Dr. Curtis's explanation of the tendon reflex, that it is most likely to be found in individuals who are a little scary, are easily frightened, easily thrown off their guard, or persons of that character. I may instance myself. I do not think I should be easily thrown off my guard, but in my case the tendon reflex is markedly present, so

much so that those who would distinguish between the forms would say that mine was an exaggerated form.

DR. J. FRANK said: I have a theory as to why the tendon reflex might be absent in a healthy person. In order to get the reflex the tendon must be put on the stretch, and there are such things as abnormal patella tendons. If the ligamentum patellæ is abnormally long when the leg is flexed the tendon is not put on the stretch; if lax and cannot be made tense, it might be struck all day without any result. I think this will explain why in some people the tendon reflex is absent. When I was a student my preceptor tried it on me but could not get any tendon reflex; it seems that at certain times my tendon answers to the blow and at other times it does not; still I have been in good health all my life. Where the tendon reflex is absent without other symptoms the tendon should be examined.

DR. JAMES JEWELL said that in tendon reflex, when the muscle is struck a shock is given to the sense nerves. He had met with a large number of cases in which the patella tendon reflex could not be obtained by the ordinary impulse, but which he had been able to elicit by other means. He thought locomotor ataxia did not depend so much upon loss of sensibility in the muscles themselves as in the great numbness of the feet. He had had cases of locomotor ataxia in which the only symptom was acute sensibility to temperature, and another who had no sensibility on the right side except in the nates.

DR. JOSEPH ZEISLER read a paper on

THE USE OF ICHTHYOL IN THE TREATMENT OF SKIN DISEASES.

Dr. Zeisler gave his clinical experience with ichthyol in the treatment of over one hundred cases of skin disease. The strength of the salves varied from 3 to 30 per cent.; frequently other drugs were added as adjuvants according to the requirements of the case. All the usual ointment bases mix well with it. Ichthyol soap was found very useful for acne rosacea and sycosis. The physiological effects of ichthyol; its regenerative power, when used in a mild form, its resolvent action when used in full strength; its contracting influence upon blood-vessels, were explained from its chief quality, to draw oxygen from the tissues. In about twenty-five cases it was used internally in the form of capsules (0.10 pro dosi), three to ten of which may be taken daily. In this form Dr. Zeisler found it very useful in chronic cases, and thinks that it may frequently be preferable to arsenic. Very good results were obtained in eczema, fifty-six cases of which, comprising nearly all forms and stages of that disease, were treated with it; its effect and the mode of its application in the principal form is described and illustrated in the history of two cases.

In sycosis (eleven cases) and psoriasis (two cases), it was found to be a very good adjuvant. Excellent results were also obtained from internal and external use of ichthyol in acne rosacea (seventeen cases). In acne vulgaris (ten cases) it did not result beneficially except when used internally. In several other cases, herpes tonsurans, prurigo and acne varialiformis, it was used in too few cases to allow of any decided conclusion.

DR. G. C. PAOLI said there is no one remedy that we can positively rely on in the treatment of skin diseases. This new remedy, ichthyol, was used by Dr. Unna, of Hamburg, but he combined it with other ointments. We cannot treat all the stages of skin diseases with the same remedy. Ichthyol has a fetid odor, and he should think it would be obnoxious in use. He has not had an opportunity to try it.

DR. E. J. KUH said: Not enough time has elapsed to express either a final condemnatory or laudatory opinion on ichthyol. The physiological experiments by Baumann and Schotten are entirely insufficient, and the conclusions reached are practically no conclusions at all. Our clinical knowledge has been sufficient to show its value in skin diseases. And as Dr. Zeisler has confined himself to a discussion of its use in his specialty, a few words bearing on the application of ichthyol in other diseases may not be out of place. Lorenz and Unna are its chief recommenders. The former in the beginning applied it in acute and chronic articular rheumatism, and to judge from the experiences of others (including myself) who have used it in this direction, there can be no doubt that it is a very strong adjuvant in this disease, and that the exhibition of salicylates is promoted in its efficacy when used in conjunction with ichthyol salve. Lorenz extended its use to gout, muscular rheumatism, contusions, gastric troubles, etc. Unna, whose enthusiasm is so unbounded as to inspire distrust, barely finds a limit to its usefulness. It is a mild anti-tuberculosum, has cured asthma in an eczema patient, will cause immediate demarcation in erysipelas, etc. It is a malicious characteristic of new remedies that they are wonderfully multiple in their therapeutic action. Time, the great enemy of the Pharmacopœia, is their surest test. Let us hope that it may deal gently with ichthyol.

DR. JEWELL thought a great deal of attention should be paid to the constitutional conditions, and especially to the neurotic aspect of cases of eczema. He had met with success in the treatment of skin diseases by a current of large quantity and mild intensity from an electric battery.

DR. JOHN A. ROBISON said that the literature on the subject of ichthyol is very meagre except what is found in foreign and special journals. He was sorry that Dr. Zeisler did not give a fuller description of the drug, in order that general practitioners might become more familiar with it. Undoubtedly many of the members present thought it a proprietary preparation, and therefore will not investigate its merits more closely. During the past year a large number of new remedies have been introduced which unfortunately bear a foreign patent, although the manner of manufacture is known. While opposed to prescribing secret proprietary preparations. he believed the therapeutical action of such drugs as ichthyol, antipyrin, thallin, etc., should be studied.

DR. R. TILLEY said that it was to be regretted that the author did not present some cases that were treated solely by ichthyol; for instance, the case that

went to so many physicians, the salicylate given would be likely to exert quite as much influence as the ichthyol, and the same might be said of the case treated by hydrarg. ammoniatum. It is really difficult to form an estimate as to what we can expect from ichthyol by the result of the combinations which the author found it necessary to use.

Dr. Joseph Zeisler, in closing the discussion, said that he did not think of recommending ichthyol as a panacea; on the contrary, he was afraid that it would be overestimated, and that some would use it in cases where it might not be beneficial. As to the remarks of Dr. Kuh, the physiological effect of ichthyol was not tested by experiments on animals, but was inferred from clinical observations. He was very much interested in Dr. Jewell's suggestion, and referred to the well known forms of neurotic eczema. Ichthyol has been found in Tyrol, Austria, in some bituminous rocks. He was unable to tell anything about its manufacture; Mr. Sargent gets it directly from Germany. In reply to Dr. Tilley, he said it was true that in some cases he could not say how much of the benefit was due to internal and how much to external treatment, how much to ichthyol and how much to other remedies. But his observations on ichthyol might still have some value when compared with other cases where *ceteris paribus* it is not used.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, November 4, 1886.

The President, B. F. Baer, M.D., in the Chair.

W. H. H. Githens, Secretary.

Dr. Joseph Price exhibited specimens from two cases, and Dr. M. Price exhibited specimens from one case of

PYOSALPINX OF GONORRHŒAL ORIGIN.

Those by Dr. J. Price were removed from prostitutes. That exhibited by Dr. M. Price was from a married woman who had been infected by her husband. The tubal disease manifested itself soon after childbirth. The menstrual period had always been very painful and had kept her in bed from eight to ten days.

Dr. Howard A. Kelly exhibited a

SARCOMA AS LARGE AS A MAN'S HEAD, REMOVED FROM THE ANTERIOR ABDOMINAL WALL.

It had its origin at the transverse tendinous band of the right rectus muscle, just below the umbilicus. The mass was about eight inches by ten, and hung pendulous under the greatly thickened skin of the right umbilical, inguinal and iliac regions. The great point of difficulty was in determining before operation whether the mass did not spring from a small hernia slipped through the umbilical ring; which was greatly drawn out on one side over the tumor, and deep in which the fibre-like cords of attachment could be felt. The tumor was very vascular, but was readily removed, and the patient made a perfect non-febrile recovery.

Dr. Kelly also exhibited a specimen upon which he desired a report by the Microscopical Committee. The case was one

OVARIAN PREGNANCY.

The patient, a German woman, who had had one child by forceps delivery two years ago, in Germany, had since been regular in her menstruation until October, when she went two weeks over time, and was then roused in the night by sudden and violent pain in the right leg and groin, extending obliquely dowu the right ovarian region. With the pain came a profuse uterine flow which lasted for two weeks with intermissions. From excellent health she was immediately prostrated and became miserable, with elevated temperature and quick pulse. She had no organic disease, but a small tumor at the extremity of the right Fallopian tube. The tumor was about two and one-half or three inches in diameter, softish, not sensitive, freely movable in the pelvis. In front of this a sharply defined round ligament could be traced out to the brim of the pelvis, and above this the flatter cover of the Fallopian tube could be felt. The ureters were enlarged, as Sänger has noticed, and the speaker has frequently verified in pregnancy. The uterus was of a size approaching two months pregnancy and the cervix was remarkably soft for the early stage of pregnancy. Dr. Kelly sent invitations to Drs. R. P. Harris, J. G. Allen, Freemann, John and Frank Haynes, Jos. Hoffman, Geo. Horn and Wm. Ferguson to be present at an abdominal section for extra-uterine pregnancy, and in their presence the operation was carried out. (The patient up to date of publication has made uninterrupted progress toward recovery). Dr. Kelly exhibited a chorionic membrane from a uterus, with a four weeks fœtus attached.

Dr. Beates remarked that the lining membrane of the cyst was easily separated from the wall and he thought the specimen was most probably a parovarian cyst.

Dr. Jos. Price thinks the cyst could be entirely shelled out. He thought that it had none of the characteristics of a tubal pregnancy.

Dr. Kelly in closing the discussion, demonstrated in the extra-uterine and in the uterine specimens an identical membrane which could be detached and which was the amnion. He demonstrated ovarian tissue completely surrounding the cyst, thus proving that it was not parovarian in its origin. The lining membrane underlying the apparent amniotic membrane is a soft tissue, never seen in an ovarian cyst. The specimen was referred to a committee.

Dr. Longaker exhibited a

FIBRO-MYOMATOUS SUBSTANCE EXPELLED FROM A UTERUS TWENTY-THREE DAYS AFTER NORMAL LABOR.

The placenta came away entire; there was a post-partum hæmorrhage on the second day. In the third week a rise of temperature occurred. The temperature became normal after the expulsion of this mass.

Dr. Kelly said that, judged by the macroscopic appearance of the specimen alone, and with great

certainty in view of the history, this flat, elongate mass, with one semi-circular rounded edge, and with long shreds hanging to it, was a portion of a retained placenta. A question is by this brought up upon which it is of the utmost importance that every member of this Society should have positive convictions, and that our practice should be uniform, and that is, What shall be done in the case of a puerperal woman who has an elevated temperature and a foul smelling discharge from the vagina? Where other manifest cause was absent every such patient should be placed in a convenient posture and the uterus thoroughly gone over with a dull curette, followed by a swabbing with an antiseptic solution. Thousands of women are to day suffering from neglect of this simple precaution of removing stinking shreds of decidua and pieces of placenta, which remaining have caused sub-involution, chronic endometritis and cellulitis, lingering for years, or even a more acute and rapidly fatal septic process. Dr. Kelly prefers the lateral semi-prone position for convenience of exposure and manipulation, considering the objections which have been urged against this as purely theoretical.

DR. BAER would prefer the patient on her back for scraping or washing out the uterus after labor, using tincture of iodine or bichloride solution.

DR. BEATES has made it a rule whenever the temperature rises after labor to introduce the finger or curette into the uterus and remove any adherent masses.

DR. LONGAKER, in closing the discussion, said that he had not the slightest doubt that the specimen had been a fibroid tumor buried in the tissues of the lower portion of the uterus; the contraction and involution of the uterus cut off its supply of blood and partly enucleated it. Time was required for this process. The rise of temperature did not excite immediate suspicion, as the case was a hospital one and the wards overcrowded at the time.

DR. BEATES, on behalf of the committee, stated that the microscopic examination of the

OVARIAN FIBROID

presented by Dr. Baer at the October meeting, showed it to be a neoplasm developed from the epithelium of the ovary; it was a true scirrhus, with nothing ovarian about it except its origin.

DR. HOWARD A. KELLY read a paper on "Hysterorrhaphy," written for the Society in the spring of this year upon a new operation which he called

HYSTERORRHAPHY, OR THE SUSPENSION BY SUTURE OF A VICIOUSLY POSED UTERUS;

that is, an organ prolapsed or retroflexed, which it is impossible to relieve by any line of treatment applied *per vaginam*.

The speaker first applied this method on April 25, 1885, upon a patient who had been under the care of several other specialists, and under his own care for nearly three years. The uterus had been acutely retroflexed, with a large soggy fundus in Douglas's pouch, below the level of the cervix. Months of rest in bed, combined with careful packs and counter irritation, and for a long time applications to the endometrium, failed to cure the flexion even temporarily. The patient had been operated upon a year previously, removing a very tender ovary *per vaginam*. On this occasion the left tube and ovary were removed, and as the right tube could not be felt it was concluded it had atrophied. The uterus was then raised and a sharp band of cicatrix-like tissue felt half encircling it in the angle of flexion, when the futility of any attempt to relieve the condition from the outside was at once evident. Silk sutures were passed through the left horn of the uterus and the body suspended from the anterior abdominal wall, about one and a half inches above the pubis to the left of the incision. The suspensory sutures were passed between two ligatures encircling the horn and the base of the pedicle, to avoid the dangers of tearing out and of bleeding.

The uterus thus suspended remained in place one year, when the right tube enlarged to a hydro-salpinx, and just before operation for its removal dragged the fundus over.

Dr. Kelly urged that in future both cornua be utilized and attached between one and a half and two inches above the pubis, to allow room for free expansion of the bladder; and again, that while in most instances the disease will have been of such long standing as to involve chronic incurable disease of the appendages necessitating their removal, yet in some cases the good effects of drainage of these latter, which are raised with the body, should be tried. The operation is to be urged where the long retroflexed, infiltrated uterus is unable to stand up straight alone after removing diseased ovaries and tubes, and if adhesions bind the fundus down they should be carefully removed. He also insisted that the operation for shortening the round ligaments was not admissable for retroflexion alone, as owing to enormous mechanical disadvantages the slightest degree of relaxation would allow a reproduction of the deformity.

While in simple prolapsus, if a supra-pubic operation of any sort were ever necessary, which the speaker doubted, he would prefer a simple, aseptically made, abdominal incision and direct support by attaching the fundus to the anterior abdominal wall, to an operation which has a doubtful and possibly a high rate of mortality, and of which the ratio of success is even more problematical.

The operation has been devised and performed independently by a number of prominent gynecologists in various parts of the world, among whom are Kœberlé, Bardenheuer, of Cologne, Hennig, of Leipsig, Czerny, of Heidelberg, a surgeon in the north of Italy, and Lawson Tait, probably Keith, and two cases not published which Dr. Sänger, of Leipsig, kindly gave the writer during the past summer.

DR. DRYSDALE remarked that he had performed a second operation upon a lady upon whom, eighteen years previously, Dr. Atlee had performed ovariotomy for the removal of an ovarian tumor; at the first operation the uterus was found prolapsed. In this operation Dr. Atlee had used the clamp to secure the pedicles, and at the second operation the uterus was found attached to the original wound. The pro-

lapse had been effectually cured. He thinks both cornue should be secured to the abdominal wall. He had never met with a case of retroversion that could not be relieved by pessary after curing the accompanying endometritis. Many years ago, a lady who had been for eight years under the care of Dr. H. L. Hodge for retroversion, and in whom the presence of a pessary excited such expulsive efforts that it could only be worn a week at a time, came under the care of Dr. Drysdale; he treated the endometritis first, and when it was cured a pessary could be retained and complete relief was secured.

Dr. James Price remarked that Tait considers it dangerous to stretch the fundus uteri to the abdominal wound, and has abandoned it. In some operations he introduces sutures to draw the uterus high up that he may more readily remove the tube close to the cornua.

Dr. Baer thought it seemed the most natural method to stitch the fundus to the abdominal wound. He asked for what reason Mr. Tait considered it dangerous? He thought the field of Dr. Kelly's operation would be small, as, when the endometritis was cured, a pessary or other support would relieve the retroversion or flexion. After laparotomy or removal of the uterine appendages it might be advisable in some cases to draw the uterus up. He has had no experience with such a procedure. He does not like the Alexander operation; he considers it unscientific, and in many cases it has failed to cure the displacement.

Dr. Longaker feared that, granting that anteversion could be secured by Dr. Kelly's method, the bladder would not be allowed to expand. A fixed anteversion would itself be pathological. He would hesitate to stitch the fundus to the abdominal wall even after removal of the appendage. Retroversion does not necessarily produce discomfort, as some cases have no symptoms to call attention to the condition.

Dr. Harris recalled the case of Mrs. Reybold, whose uterus was suspended for fifty years. She died at eighty. The senile organ was drawn out into a tongue-shape; the uterine attachment was one and a half by three-fourths inch at time of death; the uterus was four and a half inches long, and the vagina was lengthened and cord-like. There had always been a tender spot in the cicatrix, probably from tension.

Dr. Kelly stated, in reply, that he considered the main points which had been raised had been already answered in the paper. He considers these cases *rare*, and by no means recommends a resort to section and suspension without first trying every other known expedient likely to relieve, and then only in those cases in which the local disorder causes such pain or disability as to render life a burden. He considers the operation established, however, in those cases in which, after removal of the appendages, the flexed organ fails to remain upright when lifted into position. An occasional resort to hysterorraphy will not affect the table of recoveries from operation, but will affect the list of patients *cured*, which is not always made so prominent after abdominal section.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 3, 1886.

The President, C. H. A. Kleinschmidt, M.D., in the Chair.

Dr. Blackburn, of the Government Hospital for the Insane, presented a specimen of an

ENLARGED SPLEEN AND OF A COLLAPSED LUNG.

Mr. N., æt. 48; married; publisher; nativity, New York, was admitted to the Government Hospital for the Insane, September 2, 1886, suffering from acute mania, induced by malarial poisoning of many years' duration, claimed to have originated during the late war. Six days previously he had an attack of acute maniacal excitement of four or five days' duration, during which he was violent and destructive, and threatened his own life and that of his wife.

At the time of his admission he conversed coherently, but still showed traces of excitement and great nervous prostration from the maniacal attack. He had been taking, for three or four years, large quantities of morphia, alcoholic stimulants and chloral (the morphia by hypodermic injection), and to the immediate effect of these drugs was attributed the maniacal excitement. The causes assigned for the use of the narcotics and stimulants were insomnia, distress in the epigastric region, and mental anguish due to his knowledge of the existence of an enlarged spleen, of which he had made a complete study. He was pale, emaciated, sallow but not jaundiced. His voice betrayed mental and physical weakness, and he had to be assisted by the nurse.

A specific history could not be proven, but was suspected, as depression of nasal bones, some periosteal nodes, and scars from dermal lesions existed. He craved stimulants and opium, which were given him in moderate quantities. A tendency to constipation was present and had existed for years (the alvine discharges were indicative of this condition only). The urine was natural in color, but considerably increased in quantity; examination revealed no indication of renal disease.

About two weeks before his death, which occurred September 28, 1886, some pyrexia appeared as the first indication of change in his condition. The urine became highly colored, the alvine discharges pale, and the skin and eyes deeply jaundiced. One week after delirium supervened, with anorexia, nausea and occasional vomiting. This condition continued, with gradually increasing dyspnœa and nervous prostration, until his death. Death occurred apparently from exhaustion and inanition.

The specimen of enlarged spleen which I exhibit was removed from the body of the patient whose clinical history I have read. Its dimensions are as follows: Length 23½ inches; breadth 7 inches; weight 5 lbs. 14½ ozs. This size, although great, is much exceeded by splenic tumors of various origins examined and recorded by others. Gray gives eighteen to twenty pounds as weights of enlarged spleens, and other writers mention enormous increase

in size. Of the several causes of chronic splenic hypertrophy this is from the most frequent—malarial poisoning. The capsule was firmly adherent to the surrounding structures, especially to the diaphragm, and the organ had to be dissected out. It extended from the fifth rib to the anterior superior spinous process of the ilium, and laterally to within an inch of the median line. The capsule was thickened, and the color was a reddish brown; the pulp was firm and tougher than normal. The small supernumerary spleen has apparently been enlarged also. The other organs presented nothing of especial interest.

The liver was somewhat enlarged, and within the gall-bladder were several small calculi, none of which obstructed the duct. The left kidney was œdematous and flattened at the upper part from pressure by the enlarged spleen; the œdema probably caused by pressure upon the renal vein. Slight contraction of the renal tissue had occurred.

The extreme variation in weight of spleens may be seen by comparing the small specimen, which weighed 1½ ozs., with the enlarged one, which weighs about sixty times as much.

The patient conversed freely about his ailments, and as he had "suffered much of many physicians," he expressed a desire that the organ—of which he was not a little proud—should adorn some medical museum or grace the collection of some medical college. Agreeable to this request, I have brought it before you this evening.

The lung was removed from the body of a man æt. 50. Disease, chronic mania with chorea. History previous to admission unknown. The right lung extended far beyond the median line, and was emphysematous at its margins. The heart was also displaced upward and to the left. The left pleural cavity contained a moderate amount of fluid, and at first sight seemed to be empty, but underneath its thickened pleura, firmly bound to the chest walls by adhesions, was found the remnant of the left lung. It was impossible to remove it without detaching the parietal pleura. Section of the lung revealed some small, partially collapsed cavities, fibrous bands and pigmented, and calcareous masses of tubercular tissue. The right lung showed some hypostasis, but was crepitant throughout and showed no trace of tubercular disease. The clinical history was that of moderate cough and expectoration, probably bronchial to a great extent. It appears to have been a case of arrested tubercular disease.

On motion of Dr. S. S. Adams, the specimens were referred to the Microscopical Committee.

DR. S. C. BUSEY remarked that he hoped a full report would be made by the Committee, and that a discussion would follow. He asked Dr. Blackburn if he thought that the malaria and large spleen had anything to do with the mania. It seemed more likely to him that the morphia, chloral, etc., taken were the causes.

DR. BLACKBURN replied that the tubercular origin of the mania was the patient's own idea—that himself and the other medical gentlemen at the hospital thought that the drugs were causative. In reply to Dr. Hartigan, he said that the brain was all right.

DR. C. E. HAGNER said that he could not quite agree with Dr. Blackburn that the collapsed lung exhibited was tuberculous. He thought it much more likely that it was a complication caused by pleuritic effusion which had been absorbed, or a fibroid degeneration of the lung. He believed that tuberculous disease would have shown itself in some other viscera as well, and he would be surprised to find tubercles in this lung.

DR D. S. LAMB reported

A CASE OF ACUTE GENERAL TUBERCULOSIS SUPERVENING ON ENLARGED AND CHEESY MESENTERIC GLANDS—DEATH FROM MENINGITIS.

The patient was a girl, light mulatto, 3 years and 9 months old at death. There is no family history of tubercular disease. The child had good health, escaping even the ordinary eruptive fevers, etc., of childhood. In the latter part of June of this year, she had what seemed to be a "bilious" seizure, lasting a few days. From that time she never appeared to be entirely well. There were dark rings under the eyes; she lost flesh somewhat; was disposed to be continually at her mother's side; had a habit of tying up her head in a handkerchief, saying she had headache, which was supposed by her mother to be simply childish play. Her skin had somewhat of a yellowish tinge, more marked at times, and she frequently complained of itching, especially of the back, and would wake her mother up at night to have her back rubbed.

During the last week in September, her appetite was not as good as usual. October 1, while at supper, she had a paroxysm of vomiting, and afterwards slight fever. Vomiting recurred next day, and at night she had severe frontal headache, jerking of arms and hands, biting of fingers, and intense itching along back and legs. Dr. Mary A. Parsons saw patient on the 5th of October, I was asked to consult on the 10th, and Dr. Garnett a few days later. When first seen by Dr. Parsons, the child complained of pain in the abdomen; there were an irregular form of fever, and loss of appetite; she sighed frequently and said she was tired; pulse 80; respiration 18; no recurrence of the vomiting; tongue slightly coated; constipation.

On the night of the 9th she had again severe frontal headache, and cried out sharply. The pain in the abdomen continued till the 12th. On the 14th she had epileptiform convulsions with strabismus, apathy, restlessness, mild delirium, grinding of teeth, sighing; pupils contracted. These symptoms continued till the 17th. On the 16th the conjunctivæ were red. On the 17th the temperature rose to 104°; pulse to 160; spasms ceased; coma diminished so that her eyes followed the movements of her mother. On the 18th the body, especially the face, became cyanosed. On the 19th she died; nearly three weeks from the first paroxysm of vomiting. The complaint of abdominal pain, which continued till October 12, aroused a suspicion that the case might be one of typhoid fever. The pulse was 80 to 85 till the 10th, then rose to 102 and thereafter remained frequent. The respirations continued to

be 18 to 20 until a few days before her death; but there was "sighing" from the first and lasting throughout. The temperature ranged from 100° to 102° until a few days before death when it rose to 104°. There were general apathy and somnolence from the beginning, deepening into coma when convulsions set in. The fever was quite irregular, the heat of the skin rapidly increasing and diminishing. The vomiting recurred only a few times. The sharp outcry occurred only from the 9th to the 12th. The pupils were contracted most of the time; sometimes dilated and then reacted to light. Constipation throughout.

Treatment may be summed up as follows: Two small blisters placed behind the ears; iodoform ointment rubbed into the scalp; ice bag to head; calomel to open the bowels; opium and bromide of potassium for the convulsions. For several days she was nourished by enemata.

There being some doubt as to diagnosis a necroscopy was made by me October 20, with the following results: Nutrition of body fair. Dura mater and pia mater congested; sinuses full of dark blood and soft clots; thin lines and small patches of pus along blood-vessels of pia mater; [lymph in space of circle of Willis and along Sylvian fissures. Lateral ventricles dilated and contained serum and lymph]. Heart normal. Both lungs showed abundance of minute tubercles, mainly peripheral; in the right lung were also two hæmorrhagic infarctions, one in the upper and one in lower lobe. In left lung also, upper lobe, was a whitish mass the size of a pea, "solitary tubercle." Brownish mucus in stomach. Small intestine generally normal; but lower part of ileum showed slight prominence of solitary bodies and Peyer's patches. I would be inclined to consider this physiological except that the lowermost patch showed at its lower edge a small abrasion, and the adjoining segment of the ileo-colic valve showed a square-shaped ulcer through mucous membrane nearly half an inch in width. There is also what appears to be a large deeply ulcerated solitary follicle a short distance from the valve; it looks, however, like a *healing* ulcer with contraction. The colon contained fæces. The mesenteric glands mostly normal, but there were three in the ileo-colic postion which were enlarged, one to the size of an almond; they were not soft as if recent, but firm and contained thick purulent-looking matter. The liver and spleen showed many minute opaque spots in the periphery. Pancreas and kidneys normal. Bladder empty. Uterus and ovaries normal.

In brief, the case clinically was one of meningitis with a strong suspicion of typhoid fever. The post-mortem examination shows what I believe to be acute tubercular disease of pia mater, especially of base of brain, and of lungs, liver and spleen; and consequent upon extention from a focus of inflammation in the mesenteric glands.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Retirement of Professors Hardy and Sappey—Pasteur's Method.

The law compelling hospital physicians and surgeons and Professors of the Faculty to retire after a certain age, has just been applied to three eminent Professors whose teaching was so much appreciated not only by the natives of the country, but by foreigners from all parts of the world who resorted to Paris to study French medicine. The names of these Professors are familiarly known to the present generation: Professor Hardy, who was greatly valued as a clinical teacher, but before his appointment as Professor of clinical medicine he was accustomed to lecture on skin diseases at the Saint Louis Hospital, where he had been physician for many years, and where he had acquired his reputation as a dermatologist of the highest order. This did not prevent his becoming famous in general medicine, and as a clinical teacher he has hardly been surpassed. The same inexorable law affects Professor Sappey, the well-known anatomist, who has devoted almost his whole life to the study of this science, and which he taught with so great advantage at the Paris Faculty. His lectures, which were a model of their kind, will for a long time be engraved on the memory of those who attended them. Professor Gavarret had for some years past virtually retired on account of failing health and the infirmities of old age, but he was replaced *pro tem.* by Dr. Gariel, who is likely to succeed him in the Chair of Medical Physics. He was a very popular lecturer, and although physics was the subject he had to lecture on, he almost always diverged into the science of biology, which gave a great impetus to that most important branch. He may be regarded as one of the founders of biology. The vacancies caused by the retirement of these three eminent Professors will probably remain unfilled for some time, as the Minister of Public Instruction, with whom these appointments lie, will doubtless find some difficulty in obtaining successors.

At a recent meeting of the Academy of Sciences, M. Pasteur made a new communication on the results of his method against hydrophobia. This he did in person, but subsequently at the Academy of Medicine, being indisposed, his paper was read for him by the Permanent Secretary. In this report there are two arguments apparently of some value. According to M. Pasteur, there have been during the last year 1,700 French persons (the author abstains from saying anything about other nationalities) bitten by dogs supposed to have been mad, and who had been inoculated. Of this number there have been ten deaths from rabies, or one in 170. On the other hand, there is reason to believe that a few French persons who have been bitten during the year, did not go to the Pasteur Laboratory for treatment; of this small number seventeen died from hydrophobia. Another argument in favor of the method is, that in five years,

there died from rabies, in the hospitals of Paris, sixty persons, or an average of twelve per year. During the last year there have been but two deaths, and these two persons had not been inoculated. M. Pasteur's reports, however, have not escaped severe criticisms both in the medical and lay press. One shrewd observer remarked with reference to the above report that, notwithstanding the successes therein referred to, M. Pasteur, who, on the 26th of October, 1885, affirmed to have discovered an infallible method for the cure of rabies after a bite, also affirmed on the 2d of November, 1886, that the method employed during the last two months was insufficient, and that he was now employing a new method, "*la méthode intensive*," as he terms it; consisting of repeating the treatment three times a day, in employing for the inoculation spinal marrows, beginning with the oldest and ending with the most recent. For instance, on the first day, the spinal marrows of twelve, ten, and eight days are inoculated at 11, 4, and 9 o'clock. On the second day, those of six, four, and two days at the same hours. On the third day, that of one day. The treatment is resumed on the fourth day by inoculations of eight, six, and four days; on the fifth day by those of three and two days; on the sixth by that of one day. On the seventh the marrow of four days; on the eighth that of three days; on the ninth of two days; on the tenth that of one day. Three treatments are thus made in the course of ten days, each terminating in the inoculation with the freshest virus. Another curious fact in this communication is the cure by the inoculation of animals inoculated by trephining. If spinal marrows dissolved are injected into the brain, the animals become rabid; but if after this first operation one continues to inject into the same animals the rabic marrow, but this time in the abdomen, rabies does not declare itself. A. B.

STATE MEDICINE.

GEORGIA ANATOMICAL BILL.

The following is an abstract of the bill, introduced by Hon. C. M. Candler, of DeKalb, and referred to the General Judiciary Committee, has been returned to the House by them with recommendation that it pass.

A BILL to be entitled An Act for the protection of cemeteries and burying places in this State, and to prevent and punish the unauthorized uses of and traffic in dead human bodies, and for the promotion of medical science by the distribution and use of unclaimed dead human bodies for scientific purposes through a Board created for that purpose, and for other purposes.

SECTION 1. The General Assembly of the State of Georgia do hereby enact:

That the professors of anatomy, the demonstrators of anatomy, and the deans of medical and dental schools and colleges of this State, which are now or may hereafter become incorporated under the laws of this State, shall be, and are hereby constituted a Board for the distribution and delivery of dead human bodies, hereinafter described, to and among such persons as under the provisions of this Act are entitled thereto.

SEC. 2. That all public officers of this State and their assistants, and all officers and their deputies, of every county, city, town or other municipality, and of any and every prison, chain-gang, morgue, public hospital, penitentiary company in this State having charge or control over any dead human body or bodies *required to be buried at public expense*, are hereby required to notify the said Board of distribution, or such person or persons as may, from time to time, be designated in writing by said Board, or its duly authorized officer, whenever any such body or bodies come into his or their possession, charge or control, and shall, without fee or reward, deliver such body or bodies, or permit and suffer the said Board and its duly authorized agents, who may comply with the provisions of this Act, to take and remove all such bodies, *to be used only within this State, solely for the advancement of medical science.*

Provided, that no such notice shall be given, nor shall any such body or bodies be delivered, if any person claiming to be and satisfying the authorities in charge of said body or bodies, that he or she is of any degree of kin, or is related by marriage to, or socially or otherwise connected with and interested in the deceased, shall claim the said body or bodies for burial, but it or they shall be at once surrendered for interment to such person, or shall be buried at public expense at the request of such claimant, if a relative by blood or a connection by marriage, provided he or she is financially unable to supply such body or bodies with burial.

And Provided Further, that such notice shall not be given or such body be delivered if the deceased person was a traveler who died suddenly, in which case the said body shall be properly buried.

And Provided Further, that such body or bodies shall in each and every instance be held and kept by the person or persons having charge or control of it or them at least twenty-four hours after death, before delivery to said Board or its agent or agents, during which period notice of the death of such person or persons shall be posted at the court-house door of the county in which said body or bodies are so held.

SEC. 3. That the said Board or their duly authorized agent, may take and receive such bodies so delivered as aforesaid, and shall, upon receiving them, distribute and deliver them to and among the aforesaid schools or colleges for lectures and demonstrations by the said schools or colleges, the number assigned to each to be based upon the number of *bona fide* students in each dissecting or operative surgery class, which number shall be reported, under oath, by said schools or colleges to the Board at such times as it may direct.

Provided, that said schools or colleges, upon receiving them, and before any use is made of them, and without any dissection or unnecessary mutilation thereof, shall cause them to be properly embalmed and decently kept and preserved for the period of sixty

days after their reception, and shall deliver them properly prepared for buriul to any person mentioned and described in section 2 of this Act, who shall claim such body within or before the expiration of said body of sixty days, and satisfy the authorities of said schools or colleges that he or she is such person as is entitled to said body under said section 2.

If, at the expiration of said period of sixty days, said bodies have not been claimed for burial, in the manner and by the person or persons herein described, said bodies shall then be used for the purposes specified in this Act by said schools or colleges.

And provided further, that all of said bodies which have been so used and are no longer needed for the objects herein mentioned shall be decently interred by the said schools or colleges.

SEC. 4. The said Board may employ a carrier or carriers for the conveyance of said bodies, which shall be well enclosed within a suitable encasement, and carefully deposited free from public observation. Said carrier or carriers shall obtain receipts by name, or if a person be unknown by a description for each body delivered by him, and shall deposit said receipts with the Secretary of said Board, who shall record and preserve the same.

SEC. 5. No school or college shall be allowed or permitted to receive any such body or bodies until a bond shall have been given to the Governor of this State, and his successors in office, etc.

SEC. 8. Neither the State, nor any county or municipality, nor any officer, agent or servant thereof, shall be at any expense by reason of delivery or distribution of any such body or bodies, but all the expenses thereof shall be paid by those receiving the body or bodies, in such manner as may be specified or fixed by said Board.

SEC. 9. That any person having duties enjoined upon him by the provisions of this Act, who shall neglect, refuse or omit to perform the same as hereby required, shall be guilty of a misdemeanor, and on conviction thereof shall be punished as prescribed in section 4705 of the Code of this State.

HEALTH IN MICHIGAN.

For the month of November, 1886, compared with the preceding month, the reports indicate that bronchitis, pneumonia, and influenza increased, and that diarrhœa, cholera infantum and cholera morbus decreased in prevalence. Compared with the preceding month the temperature in the month of November, 1886, was much lower, the absolute humidity and the night ozone were less, the relative humidity and the day ozone slightly more. Compared with the average for the month of November in the eight years 1879–1886, intermittent fever, pneumonia, typhoid-malarial fever, remittent fever and diphtheria were less prevalent in November, 1886.

For the month of November, 1886, compared with the average of corresponding months for the eight years, 1879–1886, the temperature was lower, the absolute humidity was less, the relative humidity was the same, the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of November, 1886, at sixty-three places, typhoid fever at thirty-five places, measles at eleven places, and small-pox at one place.

Reports from all sources show diphtheria reported at the same number of places, scarlet fever at four places more, typhoid fever at eight places less, measles at five places more, and small-pox at the same number of places in November, 1886, as in the preceding month.

NECROLOGY.

JOHN PURDUE GRAY,

one of the founders and an ex-president of the New York State Medical Association, died after a long illness at Utica, N. Y., November 29, 1886, aged 61 years. He was the Medical Superintendent of the State Lunatic Asylum at Utica, having assumed the duties of that position in September, 1850, and it is no exaggeration to say that he made this institution the most favorably known in the world. As an alienist he was accepted as an authority, and almost invariably appeared as an expert in all cases of importance. His testimony is credited with being lucid, analytical and eminently impartial. When Guiteau was tried for the assassination of President Garfield he was chief of the experts summoned to Washington by the prosecution. His testimony followed that of all the other experts, in order that a careful review of the case might go to the jury at the close with all the weight of his ability and reputation. He did not see "the slightest shadow of insanity" in Guiteau, and with this conclusion the nation fully coincided.

On March 16, 1882, an unsuccessful attempt was made to assassinate Dr. Gray in Utica. He was in his office reading his mail, having just returned from Washington, when Henry Reimshaw entered and fired one shot at him from a revolver. The ball struck the doctor's left cheek bone, passed through the right cheek and lodged in the wall. The wound was not a serious one and the doctor soon recovered. Reimshaw was employed in Bagg's Hotel, and for eighteen months had been under the delusion that he was an ambassador sent from Heaven to shoot Dr. Gray. He had never been a patient in the asylum, but had taught Dr. Gray's children to swim.

As a man Dr. Gray was an enemy of sham and pretence, possessed of a judicial mind, and master of himself in the most trying situations; was thorough in the investigation of all medico-legal points bearing upon the particular case in hand, and always commanded the respect of his judges for the honesty of his opinions. He was active in the profession, defending its best interests; broad and liberal in his views, very approachable, and an especial friend to the meritorious, struggling practitioner. In the relations of life he was beyond censure, and died regretted in the community where he was best known.

BOOK REVIEWS.

THE DIAGNOSIS AND TREATMENT OF DISEASE OF THE EAR, by OREN D. POMEROY, M.D., Surgeon to the Manhattan Eye and Ear Hospital; Ophthalmic and Aural Surgeon to the N. Y. Infant Asylum; Consulting Surgeon to the Paterson Eye and Ear Infirmary; Member of the American Ophthalmological and Otological Societies, etc. Second edition, revised, with Additions; 8vo. With 100 illustrations. New York: D. Appleton & Co. 1886.

The appearance of the second edition of this work soon after the issuing of the first is a sufficient indication of the high value placed upon it by the medical profession. The author has in this, as in the first edition, omitted the usual chapter pertaining to the anatomy and physiology of the ear. We regret this omission; a cursory reference to its construction and action would enhance the value of this otherwise creditable work.

Dr. Pomeroy has incorporated in his book the latest researches, and shows by numerous citations and references to recent publications his thorough familiarity with current aural literature. The chapter on "Treatment of Purulent Otitis" contains the newest means of medication, based on the revolutionary methods of antisepsis. We fail to notice, however, any allusion to peroxide of hydrogen, which, although not universally employed, is considered a valuable adjunct to the aurist's armamentarium. The description of the naso-pharynx and its diseases is brief, but to the point. The book is of special importance to the student and general practitioner, directing their attention, as it does, to the necessity of treating these parts in conjunction with the ear.

HENKE'S ATLAS OF SURGICAL ANATOMY. A series of Plates Illustrating the Application of Anatomy to Medicine and Surgery. Translated and edited by W. A. ROTHACKER, M.D. Cincinnati: A. E. Wilde & Co.

This work consists of eighty-one large plates, which are carefully and clearly drawn. That which makes the work practically valuable is the exposition of structures, not in systems, but just as they are laid bare by dissecting. The introduction of numerous plates of sections adds very greatly to the value of the work. Sections of the head and brain made in different directions and at different points are given, also two transverse sections of the neck; several transverse and longitudinal sections of the thorax, and a number of sections of the pelvis in both males and females. The contents of the abdominal cavity is shown by a number of plates representing the organs as they appear when portions are removed in longitudinal layers.

A feature which adds much to the utility of the book is noticed in the placing of the names of parts along the margin of the pages.

A book of this kind is always useful to physicians and surgeons in enabling them, at a glance, to see the relationship of parts. The drawings are sufficiently large and so well made that no difficulty is experienced in using them.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 27, 1886, TO DECEMBER 3, 1886.

Major Daniel G. Caldwell, Surgeon, granted twenty days' extension of his leave of absence. S. O. 278, A. G. O., Dec. 1, 1886.

Capt. E. B. Moseley, Asst. Surgeon, relieved from duty as attending surgeon in San Francisco, Cal. S. O. 99, Div. Pacific, Nov. 19, 1886.

Capt. Edw. B. Moseley, Asst. Surgeon, directed to take charge of the Medical Purveying Depot, San Francisco, Cal., until the arrival of a proper bonded officer. S. O. 99, Div. Pacific, Nov. 19, 1886.

Capt. Louis S. Tesson, Asst. Surgeon, granted leave of absence for four months, to date from Nov. 13, 1886. S. O. 278, A. G. O., Dec. 1, 1886.

First Lieut. Peter R. Egan, Asst. Surgeon, assigned to duty at Ft. Clark, Texas. S. O. 162, Dept Texas, Nov. 22, 1886.

First Lieut. Wm. J. Wakeman, Asst. Surgeon, leave of absence extended three months. S. O. 274, A. G. O., Nov. 26, 1886.

First Lieut. W. D. McCaw, Asst. Surgeon, granted leave of absence for two months, to take effect when his services can be spared. S. O. 274, A. G. O., Nov. 26, 1886.

First Lieut. C. L. G. Anderson, Asst. Surgeon, recently appointed, ordered for assignment in Dept. Arizona. S. O. 277, A. G. O., Nov. 30, 1886.

First Lieut. Robert R. Ball, Asst. Surgeon, recently appointed, ordered for duty in Dept. of the Missouri. S. O. 278, A. G. O., Dec. 1, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING DECEMBER 4, 1886.

Farwell, W. G., Surgeon, detached from the "Kearsarge," proceed home and wait orders.

Gatewood, J. D., P. A. Surgeon, detached from the "Kearsarge, proceed home and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDED NOVEMBER 27, 1886.

Williams, L. L., Asst. Surgeon, granted leave of absence for twenty-four days, to take effect when relieved. Nov. 15, 1886.

McIntosh, W. P., Asst. Surgeon, granted leave of absence for twenty-seven days. Nov. 26, 1886.

Norman, Seaton, Asst. Surgeon, when relieved to rejoin station (New York); granted leave of absence for twenty-three days. Nov. 27, 1886.

CORRIGENDA.

In THE JOURNAL of November 27, p. 611, the title of the paper read by Dr. E. M. Moore, before the New York State Medical Association, should be "Subluxation of the Radius Downward, by Elongation at the Elbow, in Young Children."

In THE JOURNAL of December 4, article of Dr. Schenck, on "Hygiene of Periodic Fevers," p. 623, 2d column, 5th line from bottom of 2d par., for "mighty chill" read *nightly* chill. On p. 624, 12th line, 1st col., for "toxic doses" read *tonic* doses.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, DECEMBER 18, 1886. No. 25.

DEPARTMENT OF THE ARMY · SURGEON GENERAL'S OFFICE · LIBRARY

ORIGINAL ADDRESS.

RHINOLOGY IN THE PAST AND OF THE FUTURE.

An Address Delivered before the American Rhinological Association, on October 5, 1886, at St. Louis, Mo.

BY CARL H. VON KLEIN, A.M., M.D.,

OF DAYTON, OHIO.

No subject can present a higher interest than an inquiry into the past and future of rhinology. Whatever tends to correct error or introduce improvement into science must affect the comfort of the profession. No research on such a subject can be accounted too minute, no labor too long. Progressive as we have been in the past few years, we cannot boast of having revealed the last trace of civilization. When we look back to the history of rhinology, we find that as a specialty it is not of modern invention, as many suppose it to be. Egypt was the earliest home of medical skill, and every mummy of the more expensive and elaborate sort involved a process of anatomy, particularly as to its pathological condition, and these interesting pathological specimens were more numerous by reason of the profession being divided into specialties. Herodotus says:[1] Egypt claims the invention of healing art. The medical practice among the Egyptians is divided, and each physician is for one kind of sickness and no more, and all places are crowded with physicians, for there are physicians for the eye, physicians for the head, physicians for the nose, physicians for the teeth, physicians for the stomach, and for internal diseases.

It is claimed that the best anatomists among those specialists were those who practiced on diseases of the nose and stomach; they were the embalmers.[2] Embalming was first done by the rhinologist, removing a part of the brain through the nostrils by means of a crooked iron, and destroying the rest by injecting caustic drugs; and by the practitioners of the stomach, who made an incision along the flank with a sharp Ethiopian stone, and the whole of the intestines removed. The cavity was rinsed out by palm wine, and afterwards scoured with powdered perfumes. It was then filled with pure myrrh, pounded cassia and other aromatics, except frankincense. This done, the body was sewn up, and steeped in natron for seventy days. When the seventy days were accomplished, the embalmers washed the corpse and swathed it in bandages of linen cut in strips and smeared with gum. They then gave it up to the relatives of the deceased, who provided for it a wooden case, made in the shape of a man, in which the dead was placed.

Besides embalming, the rhinologists were also assigned as executioners in punishment of adultery, which was inflicted upon adulterers by amputation of the nose. Strabo says:[3] Rhinocolura is so called from the colonists whose noses had been mutilated. Some Ethiopians invaded Egypt, and instead of putting the malefactors to death, having cut off their noses they settled them at Rhinocolura, supposing that they would not return to their own country, on account of the disgraceful state of their faces. This gave those specialists opportunities for inspecting a vast amount of material, varying in every possible pathological condition. Such opportunities were sure to be turned into account by the more diligent among the faculty. Their reputation was so widely established that[4] Cyrus and Darius, kings of Persia, sent to Egypt for physicians. The former was afflicted with nasal polypi, the latter with ophthalmia.

From all historical accounts it is demonstrated that rhinology was one of the most cultivated specialties in the art of medicine. I have no doubt that rhinoscopic examinations were made by the Egyptians as well as they are made to-day. The use of mirrors among them was so common that they not only used them in their residences, but even as ornaments on their garments, and arranged them in their hair. And in the Egyptian temples, it was the custom for women to worship in linen garments, holding a mirror in the left hand and a sistrum in the right. Sir G. Wilkinson says[5] that the mirrors were susceptible of a lustre which has only been partly revived at the present day.

The treatment in rhinology we may imagine was absurd; yet Hippocrates described the same treatment of inhalation, fumigation and inspiration of essential oils, just as it is used at the present day.

In the treatment of syphilis, fumigations were extensively applied in clearing away the incrustations which generally exist in syphilis of the nose. Injection of lotions have been used from time immemorial. As to the success, whatever it might have been, we are unable to find any records thereof. Various compilations are in existence of the relative sum of the

---

[1] Ill. in loco.
[2] Herod., ii, 86–89.
[3] Strab., xvi, 2.
[4] Smith's Dict., p. 1069.
[5] Ancient Egypt, iii, 384.

disease of the various organs, but none pertaining to rhinocal. If there is such in existence, we can only expect an approximation to accuracy. Rhinology, like many other specialties of this century, began by men incompetent for the task. Any data, therefore, from this source, are too uncertain for philosophical deduction.

Medicine is no doubt one among the many lost ancient sciences. From the period of the cultivated Egyptians to about the fifteenth century, very little was known of the science of medicine. From Hippocrates to the days of Galen, a period of about six hundred years, and from the time of Galen to Fracastora, a period of about thirteen centuries, the science of medicine was like a barren desert. At the beginning of the sixteenth century she began to break the clouds which overspread the skies of blue, and the cultivation of medicine made its progress from day to day; though in the rear of other sciences, yet she is amid civilization.

It was not until the beginning of the present century, when the scopic method was thought of, that physicians became able to make a correct diagnosis of diseases. Great has been the usefulness of the urethroscope, rectoscope, stethoscope, ophthalmoscope, otoscope, microscope, laryngoscope, and only within the last few years the rhinoscope. Considering the numerous difficulties, and the multitude of conflicting theories which had from time to time been promulgated, on account of the parts and by reason of their being hidden from view, the pathological theories of nasal diseases were absurd and unphilosophical. Yet, with all its antagonism, it has in a great measure unveiled itself before the light of modern investigation, and become reduced to a more scientific basis, though we cannot boast, however, we opened a new road to medical science.

Our first acquaintance with some sort of an illuminator of the upper respiratory tract is mentioned by Levret, of Paris,[6] in 1743. In 1803, Bozzini[7] invented a kind of hand mirror for the purpose of examining all sorts of obscured cavities in the human body. In 1827,[8] Senn, of Geneva, proposed to examine the larynx by a small mirror, by introduction into the mouth. In 1829, Dr. Babbington,[9] of London, invented an instrument which he termed glottiscope, and also some sort of a tongue depressor of polished steel combined with a mirror. In 1832,[10] Kaslinsky, of Warsaw, invented a combined mouth speculum and gag. In 1835,[11] Plate, of Amsterdam, describes a double mirror for the examination of the larynx and pharynx. In 1837,[12] Selligue, a very intelligent machinist of Paris, who himself was subject to laryngeal phthisis, invented a laryngeal speculum consisting of two tubes, through which light was thrown into the glottis, and by a counter glass, which he placed in his guttural extremities, he was able thereby to view his own disease. In 1838,[13] Baumès, of Lyons, demonstrated a laryngeal speculum which cannot be found anywhere described. In 1840,[14] Liston, of London, applied in the examination of the larynx a dental mirror with a long handle, similar to that of Babbington. In 1844,[15] Dr. Warden, of Edinburgh, introduced a contrivance made of an argand burner lamp, for the examination of the glottis. In the same year Avery, of London, is said to have invented a successful instrument, for the purpose of examining the dark parts of the upper respiratory organs. In 1855,[16] Garcia, a Spanish vocalist and teacher in the City of London, wrote a paper entitled "Physiological Observations on the Human Voice," which he read before the Royal Society, wherein he explains in what manner a large reflecting mirror, with a small dental mirror in the mouth, can be made to exhibit the anatomy and the physiological actions of the laryngeal and pharyngeal organs.

At this time a period of half a century has elapsed, with discoveries from year to year to open a path to rhinology, yet not until 1847[17] the illustrious Dr. Türck, of Vienna, perfected a laryngoscope upon the same order as that invented by Garcia, of which he claimed to know nothing; it was much superior but of great resemblance to Garcia's. In 1859,[18] Dr. Czermak, of Pesth, and Dr. Gruber, of Krakau, with the assistance of Dr. Türck, experimented with the latter's instrument, until they had opened a broad road to the obscure places which we are here to discuss.

The system of rhinology has made a rich harvest of natural discovery which benefited mankind more than any progression in medical science made in this century, save anæsthetics. No organs within the human system can be so disclosed and show their pathological conditions, as those affected by the laryngoscope and rhinoscope. I speak of the laryngoscope, because rhinology and laryngology work hand in hand, and the former developed itself through the latter; and through Türck's invention of the laryngoscope we are indebted to Czermak for the invention of the rhinoscope. Since he has demonstrated the pathological conditions of the upper respiratory tract by illumination, many have tried to improve upon the process of illuminating the nasal pharyngeal cavities, with many good and important results.

The improved methods of Schroeder, Schnitzler, Senefelder, Cramer, Voltolini, Stoerk, Lewin, Traube, Fraenkel, Hirschberg, Ruete, Merkel, Waldenburg, Krishaber, Middeldorpf, Gerhard, Ziemssen and Tobald, of Germany; Rauchfuss, Poznisky, Ritter and Volltzior, of Russia; Mandl, Maura Bourouillon, Batrille, Cusco, Trauvel and Beverbire. of France; Mackenzie, Gib, Johnson and Boxt, of England, and so many others of this side of the Atlantic, that it would require an entire volume to name them all.

Through their constant effort to improve the illuminary apparatus they have made many valuable ob-

[6] Phthisie laryngée. Paris, 1837, S. 177.
[7] Hufeland's Archiv der Heilkunde. Neue Folger, 17 Band.
[8] Gazette Hébdomadaire de Médecine et de Chirurgie. Paris, 1863, p. 263
[9] Phthisie laryngée. Paris, 1837, S. 177.
[10] Woyenie Medicinsky Shornall. St. Petersburg part., L. xii.
[11] Plate's Voordragt over des Keelknobbel onderzœking. Amsterdam, 1836, p. 13.
[12] Illustrated by Morell Mackenzie. Third Ed., London, 1871.
[13] Trousseau et Belloc. Paris, p. 180.
[14] Liston's Practical Surgery. London, 1841.
[15] London Medical Gazette, 1844, vol. ii, p. 256.
[16] Gazette Hébdom. de Méd. et de Chir., 16 Nov., 1855.
[17] Zeitschrift der Ges. der Aertze zu Wien., April, 1858.
[18] Czermak, Der Kehlkopfspiegel und seine Verwerthung für Physiologie und Medicin, 2 Auflage. Leipzig, 1863.

servations within the nasal cavities, necessitating the invention of many other instruments, such as rhinoscopic mirrors, nasal speculums, tongue depressors, palate hooks, uvula holders, nasal douches, nasal syringes, nasal spouts, nasal sprays, nasal catheters, nasal inhalers, nasal sponge holders, nasal forceps, nasal probes, nasal respirators, nasal powder blowers, nasal tampons, nasal snares, nasal écraseurs, nasal retractors, nasal cannals, nasal scissors, nasal brushes, nasal caustic holders, nasal evaporators, nasal dilators, nasal camesoils, nasal plugs, nasal gauges, nasal drills, nasal blowers, nasal burs, nasal saws, nasal trocars, nasal spoons, nasal knives, nasal curettes, nasal clamps, nasal applicators, nasal fumigators, nasal cauterizers, nasal cauterys, nasal electrodes, etc.

The rhinoscope evidently brought to light the necessity of inventing the appliances mentioned, and their inventors, in order to complete them, were forced to experiment with them, and by their experiments many observations were made, to such an extent, that it had made many deaf ears hear, and many blind eyes see, because many of those afflictions are caused by rhinocal disease, to say nothing of the numerous other kindred diseases, to which the upper respiratory tract is the sole cause. It has lately been discovered that many of the lower respiratory organs cannot be healed until the disease of the nasal cavities is cured. The dreadful disease, asthma, which has always been considered a nervous disease, has recently been successfully treated by the removal of a large hypertrophy of the posterior nares.[19] Others, as I, have cured cases of nervous prostration by healing the nasal pharyngeal cavities, and many other organs connected therewith. Such affections may frequently be observed in the bladder, liver, kidney, stomach and brain.

In 1881 I succeeded in curing a case of epilepsy of two years standing by the removal of two large polypi of the posterior nares. The patient was a girl 11 years old. In the same year I successfully treated a case of insomnia by the same operation as in the former case. Last year I cured a case of supposed insanity by extirpating a large turbinated process. Indeed, there is scarcely an organ or structure of the body in which they are not occasionally affected by nasal disease; it stands to reason; the nose is the gate to disease; in nine cases out of ten the causes of human ailments pass through the pathway of the nasal cavities. If an inhalation of obnoxious gases can enter the lower intestines and produce a typhoid fever, why cannot it enter to the other organs or structures of the upper and lower extremities? When a piece of heavy artillery passes along the highway it can be traced from the very spot the wheel commences to revolve; it leaves its impression from the starting point to its destination. All diseases caused by exposure, or inhalation, must evidently make their first impression within the gate, the nose. It would therefore be better in all cases that rhinoscopic examinations should be made whatever the disease may be, the gate should be first examined.

The nose is the foundry of a large machine-shop, wherein disease appears in its rough casting. Other organs are finishing rooms, wherein they appear entirely developed. In fact, the whole human body is comparatively a machine, and such a machine should be handled by different machinists; as all the cogs are connected, therefore they ought to be understood by each mechanic the connection of the entire machine; as a single cog, in a single wheel, is no doubt but a small part of its mechanism, and can contribute but a small portion to the effect of the entire work; yet the want of its coöperative influence may, if not entirely stop, yet greatly impede its motion. It is ever so with the physician, though he ought to understand every physiological action, and its anatomical connection with every part within the human body, yet, I hold that he ought to practice only a specialty. If a mechanic, for example, a fabric, wood, or a metal worker, who requires simply physical training, can produce better special work, why not a physician make better cures if he confines himself to a specialty? If a cabinet maker can make a better bureau than a bedstead, or a pants-maker can make a pair of pants better than a coat-maker, or a metal-worker can produce better filing than an anvil-worker, or *vice versa*, why not a cultivated physician with an active brain and mind, who devotes himself to one special subject, make a better physician? A man who devotes his mind and trains his eye to microscopy, makes a competent microscopist; why not he who devotes his time and trains his mind to the ophthalmoscope, make a good ophthalmologist? or a laryngoscopist a laryngologist? and a rhinoscopist a rhinologist? Above all, I believe that rhinoscopy is one of the hardest studies of all. It takes more perseverence, patience and assiduity to make a correct rhinoscopic diagnosis than in all other "scopics." Only such persons who are constantly devoting their time to rhinocal pathology are qualified.

Specialism is a discovery of lost thought in medical art. Sooner or later we will all be specialists, but not until the common prejudice has vanished and the narrow-minded will cease to influence those who are eager to learn the truth. Dr. Crosby, of Manchester, President of the New Hampshire Medical Society, in his Annual Address says:[20] "Shall the practice of medicine sink to the level of a trade, where every competitor supplements his skill as an artisan by all the tricks of cunning and diplomacy of which he is able? Shall the body of the profession be broken up into fragmentary joints, each little segment calling itself a specialist, until the organs of the body are parcelled out as booty is divided among thieves? Shall the grand old column be broken up into detachments that shall ultimately destroy one another, because men honestly differ as to means employed to subdue disease?"

Just think of such irreverent assertions by men who ought to seek the truth which is before them, and forsake the errors of the past. But, gentlemen, fear it not; such is like the wretched ghosts of the idle and the inglorious in the Inferno of Dante, who did neither good nor harm while on earth, and who

[19] Jour. Am. Med. Ass'n, vol. vi, 1886, p. 696.

[20] Boston Med. and Surg. Jour., vol. cxv, 1886, p. 15.

are in consequence debarred all admission into heaven and hell as having no direct character for either place:

> Cacciarlii Ciel per non essermen bello ;
> Nè lo profondo Inferno gli riceve.

The remarks of Dr. Crosby are heretical to the sentiments daily advanced by great men of medicine. Our beloved lamented late Dr. Austin Flint gives the following to the world with the last stroke of his pen:[21] "The unavoidable subdivision of medical literature and medical instruction into special departments makes necessary, to a certain extent, specialism in the practice of medicine. It is certain that this will not lessen, but increase in the near future, and it is important to think of possible emergencies which are even now foreshadowed. Specialism conduces to the advancement of knowledge. It behooves us, however, to consider, where the practice of medicine is to be given up to specialists, what would become of the medical profession? With due appreciation of services devoted to special branches of medical knowledge, there are tendencies pertaining to the practice of a specialty that should not be overlooked."

Dr. Angell, of Rochester, President of the Medical Society of Central New York, in his Annual Address, says:[22] "It is an undeniable or selfevident fact, that at the present day medical science has expanded to such an extent that its intelligent cultivation as a whole, by one person, has become impossible."

The body of the medical profession should and must "be broken up" into "specialisms." It should not remain as "a Jack of all trades and master of none." "The grand old column" which has been standing for so many years, must be repaired and decorated with fine jewels to meet the present demand in medical science, that she may glitter in the midst of other sciences. Nor "shall certain methods be considered Catholic, and all else irregular and to be damned by bell, book and candle."

If rhinology had to depend on the treatment recommended by writers of general medicine, she could not reach the bright future before her. We must take cognizance of the fact that her future is filled with admiration of the striking phenomena, having an inexhaustible mine of pathological developments lying dormant within the reach of those who wish to adjure them. For there is no condition, no period of life that can claim immunity from disease within the nasal cavity.

It is said that about nine-tenths of the human family are more or less afflicted with rhinocal disease, and which were not observed on account of insufficiency in rhinocal appliances.

Here a wide and wonderful chasm occurs, which cannot be, as formerly, overlooked. The illumination by the rhinoscope, the examination by the microscope, the extirpation by electro-cautery, the inspiration by the spray, and by the true, honest and conscientious method of our friend Dr. Rumbold, will make rhinology fruitful and progressive. If we will not remain idle, many important facts will be unveiled and rhinology will be the greatest in the whole domain of medicine. The microscope will reveal new pathological organic disease of the olfactory sense. The variety of nasal catarrh will be divided by each individual characteristic discharge, having its own nomenclature, according to their morbid condition.

The various muco-purulent discharges which originate in the different sinuses, will, as well, be recognized by microscopic examination. All the hypertrophies within the nasal chambers will bear their own pathological name. The eruptions and ulcers in the nose will be regarded like the variety of eczema. The abscesses, polypi, and all other foreign bodies within the nasal cavities will be assigned to their own nomenclature. By a combination of the rhinoscope and the microscope diagnosis will be made easy and certain.

The treatment in nasal diseases might change in the use of drugs and remedies, but in the manner in which it is applied the spray and Rumbold's method will remain certain and without end. The day is not far when all diagnosis of the respiratory and their kindred organs will first be looked after in the upper respiratory tract. Hospitals and asylums will be well fitted out with rhinoscopic appliances for the purposes of examining all those who may become inmates of these institutions. The public will become acquainted with this specialty as well as they are with the dental profession, so that the rhinologist will not have to depend mainly on practice which is sent or recommended by the general practitioner.

Gentlemen, from all the foregoing you will doubtless place me as a specialist. I am sorry to state that I am not; nor will I be untill the profession has adopted "the best policy," and that is, "honesty." I mean honesty with their professional brethren. I know of a physician in good standing befriended by all the practitioners (about one hundred in number) within his city, who three years back commenced to practice, as a specialty, diseases of the nose and throat; though he was encouraged daily while in conversation, however, during said period but a single patient was recommended to him. I hold this dishonesty; for the simple emolument of a few shekels they were but too willing to undertake to treat disease for which they are neither competent nor prepared.

There are theories which some men despise because they will not consider them, and which they will not consider, because they despise them. They naturally despise specialties, because they think them insufficient, and hate specialists, because they think them inferior; with such men, be cautious in your intercourse, as they always consider themselves greater; such men seldom confer obligations on their supposed inferiors but from interested motives. Friendly they appear, as long as it serves their own turn; but they will render no assistance in time of actual need.

In conclusion to the foregoing I will say, all those

---

[21] Flint's Medicine of the Future. The prepared Address for the Annual Meeting of the British Medical Association for 1886.

[22] Buffalo Med. and Surg. Jour., July, 1886, p. 567.

obstacles are indeed great, but to determined and persevering exertion they are not insuperable; though we cannot conceal them from ourselves, we should not allow them to daunt our spirit; let us comfort ourselves by devoting our time and talents for the good, not only for the world of medicine, but the world of man.

ORIGINAL ARTICLES.

PNEUMONIC FEVER IN PREGNANT FEMALES.[1]

BY EDWARD F. WELLS, M.D.,

PROFESSOR OF MATERIA MEDICA, PHARMACOLOGY AND CLINICAL MEDICINE IN THE COLLEGE OF PHYSICIANS AND SURGEONS, OF CHICAGO.

Recently I have had to treat an important case of pneumonic fever in a pregnant female, in the course of which several momentous questions of practice arose in such a manner as to again, forcibly and practically, bring before my mind a subject which had already attracted much of my attention.

Case 1.—Mrs. H. K., aged 31. On December 10, 1882, being two months advanced in her fourth pregnancy, she attended church, walked home, a distance of a mile, and was at once seized with a lacerating pain under the right nipple, followed by a severe rigor, fever, cough, expectoration, and all the ordinary symptoms of a moderately severe attack of pneumonic fever, with hepatization of the lower lobe of the right lung. The malady pursued an uneventful course, during which a profuse epistaxis, an abundant labial and nasal herpetic eruption and a low range of temperature were the only remarkable features. Crisis occurred on the seventh day, and she carried her child to full term. Thirteen months later she suffered a second attack, with implication of the left base, which ran a mild course and terminated by crisis on the fifth day. At this time she was pregnant about a month, but was unaware of the fact, and again abortion did not occur.

On March 13, 1886, being near full term with her sixth pregnancy, this lady was taken with her third attack of pneumonic fever. There was a severe rigor of three hours' duration, followed by ardent fever, agonizing pain in the left side of the chest in the axillary line, distressing dyspnœa, cough, expectoration of characteristic sputa, and the other ordinary symptoms of the disease. I first saw her on the evening of the second day, and found her with, besides the above-mentioned symptoms, a flushed and anxious countenance, a rapid pulse, vomiting, etc. Throughout the entire left lung there were abundant crepitant râles, with beginning dulness and tubularity at the base posteriorly. Her abdomen was greatly enlarged and the fœtal movements were vigorous and frequent. The malady gradually assumed a most alarming aspect, so that by the fourth night she was delirious and had a parched tongue and abundant sordes upon the teeth. At this juncture I advised the production of premature labor, but the measure was peremptorily declined by the patient. On the sixth day there was low, muttering delirium, with total unconsciousness of all surroundings, a pulse of 130, temperature of 104.2°, and a respiration rate of from 48 to 60 per minute. There was retention of urine, involuntary discharge of fæces, absence of expectoration and tracheal râles. At 5 o'clock P.M. I determined to deliver, having in view the saving of the child's life and the forlorn hope of improving, however slightly, the chances of my patient. I introduced deeply into the uterus a gum elastic catheter, which brought on contraction in about four hours, and the child, a boy, was safely delivered in three hours more. The placenta was found detached and was removed in a few minutes. There was about the usual amount of hæmorrhage.

For a few hours the condition of my patient was somewhat improved. Her pulse became less frequent, falling to 92, the temperature declined gradually to 99°, and the respiration to 40 per minute. Expectoration returned, the tracheal râles disappeared, and she became, at times, more rational. On the seventh day, however, distinct symptoms of puerperal mania manifested themselves, and, these increasing in severity, she died exhausted on the ninth day. For several hours before her death there was, clearly perceptible to all who approached near the patient, present a peculiar odor—the *odor mortis*. In this connection it is but fair to say that the pulmonary symptoms, as evidenced by the diminished frequency of the respirations and cough, the easy expectoration, the moisture of the râles, etc., continued to improve to the last, and that the fatal termination was clearly due to the complications. With a full and complete knowledge of all the circumstances attending the case, I feel satisfied that had not the puerperal mania—which has already repeatedly affected her mother and two sisters—attacked her, she would have recovered. An autopsy was not allowed.

Inasmuch as a certain and almost constant proportion of women within the limits of the child-bearing age are at all times pregnant, and as pneumonic fever is no great respecter of persons, as we shall presently see, it must follow that a definite percentage of pneumonic patients are pregnant females. The mutual influence which these conditions exercise upon each other must, in the light of the experience detailed, ever remain a subject of the deepest interest and one involving questions of the greatest practical importance. Some of these interrogations may be formulated as follows:

1st. What proportion do the pregnant females bear to the total population?

2d. What proportion of the females of child-bearing age are pregnant?

3d. Does pneumonic fever attack females more or less frequently than other classes of the population?

4th. In what manner is the course and terminations of the disease modified by the condition of pregnancy?

5th. In what proportion of these cases does abortion or premature delivery occur?

6th. What modifications of treatment are desirable or necessary?

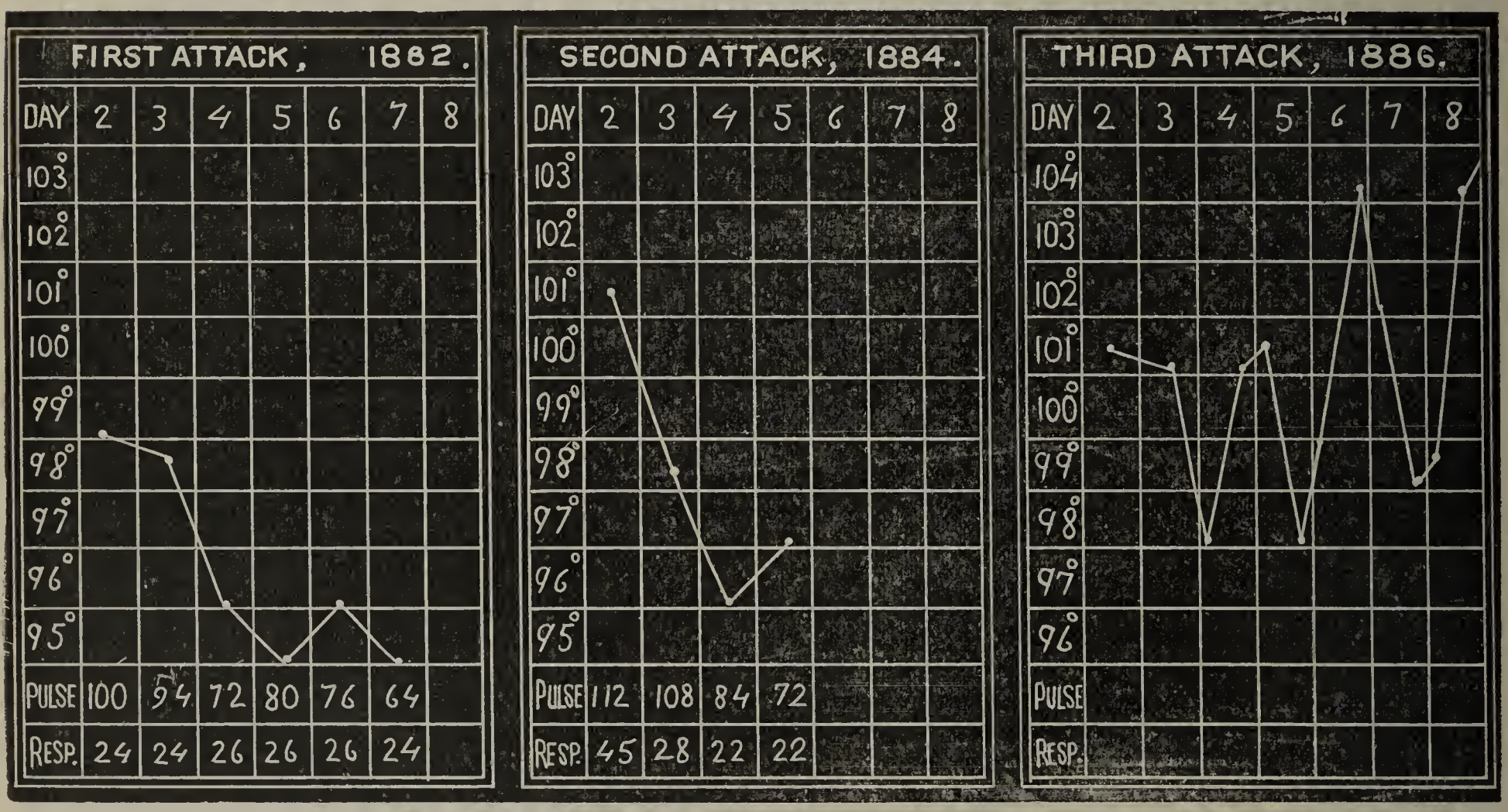
I pass by the first and second questions as being

[1] Read by title in the Section on Medicine at the Thirty-seventh Annual Meeting of the American Medical Association.

of minor importance, and come at once to the third. Jürgensen[1] considers pregnant females as being less liable to attacks of pneumonic fever than other classes of the population. Of the 2475 female pneumonic patients treated in the Vienna General Hospital only forty-three were pregnant. From the total number of patients must be subtracted 611 who were over 50 years of age, and twenty-four who were under 15 years. There remains 1824 of child-bearing age, of whom forty-three, or 2.3 per cent., were pregnant. Of these forty-three, twenty-five aborted,[2] and of these twenty-five, seven died, a mortality of 28 per cent.[3] Of my 456 cases ninety-four were married females of child-bearing age, and of these eleven chanced to be pregnant. In these cases pregnancy had existed from one to three months, in four cases, and from six to nine months in seven cases. Of these eleven cases none of the first class aborted, and of the second class one at six months and two at eight months were prematurely delivered, and in the case related labor was brought on at near full term. The remaining seven cases carried to full term. All the patients, save one, recovered. The children were all born alive, but all except the one delivered at near term died very soon after delivery. Judging from the data afforded by Jürgensen's and my own statistics, I am clearly of the opinion that pneumonic fever is met with in pregnant females in fully as great a proportion as amongst the non-pregnant of the same age and condition. I must therefore dissent from the opinion of Jürgensen as above expressed.

It has generally been considered that pneumonic fever pursues a more acute, rapid and severe course in the pregnant female, and that the danger is greatly augmented. This has not been the rule in my individual experience, although I do not deny that it might appertain in the practice of others. Thus Tyler Smith[4] says that "it is well known that blood drawn from healthy women during pregnancy generally shows the buffy coat, and it is found that all inflammatory diseases have a tendency to a more acute form than usual and require a more prompt and active treatment than under any other circumstances. This is particularly the case in inflammatory diseases of the chest." Peter[5] considers organic disease of the heart a common cause of acute pulmonary diseases in the pregnant female, and advises that women affected with heart disease should be cautioned against becoming pregnant, and should they unfortunately become so, prophylactic measures against pulmonary affections should be had recourse to.

Grisolle[6] long ago made the statement that more than one-half of the pregnant women attacked by pneumonic fever abort or are prematurely delivered, and subsequent experience only confirmed him in this belief.[7] Jürgensen's statistics[8] show a somewhat larger, and my own a somewhat smaller, proportion, but the number of cases is too small to serve as a basis for correct conclusions on numerical grounds. Judging from my individual observations and from the unpublished experience of others with whom I have conversed, I am of the opinion that it would



CHARTS, SHOWING TEMPERATURE, PULSE AND RESPIRATION RATE IN THE THREE ATTACKS.

[1] Ziemssen's Handbuch d. Spec. Path. u Therap., Bd. V, Leipsig, 1877, p. 28.
[2] Jürgensen, op. cit., p. 28.
[3] Jürgensen, op. cit., p. 127.
[4] Lectures on Obstetrics, Lancet, N. Y., 1856, p. 523.
[5] L'Union Méd., Feb. 27 and March 5, 1872.
[6] Traite de la Pneumonie, Paris, 1841, p. 470.
[7] Arch. Gen. de Méd., Jan., 1850. [8] Op. cit.

be more correct to say that before quickening abortion will rarely occur, but after this time premature labor will take place in the majority of cases. Gusserow[9] and Ringe[10] have made some extensive studies concerning the conditions under which abortion or premature delivery occurs in the acute infective diseases, and have come to the conclusion that the increase in the body heat is the one exciting cause. They found that a temperature of 108° certainly caused the death of the child *in utero*, with consequent delivery; and that any temperature above 104° was pretty sure to be followed by the same result. Although a high temperature may be one of the causes of miscarriage in these cases, yet I am convinced that until additional proof is offered us that it is the only cause, we ought to render a verdict of "not proven" to the proposition of Gusserow and Ringe. In my cases there were two premature deliveries in subjects with a temperature of not above 102°, and there were two others in which pregnancy proceeded to full term in which the temperature exceeded 104°. In the case detailed at the beginning of this paper there were no symptoms of approaching labor, although the temperature exceeded 104° and the child was not destroyed. It is probable, therefore, that there are other factors, equally potent, besides the exalted temperature, which determine delivery in pneumonic fever. With the multitude of possible causes at play, each of which might be instrumental in causing delivery, it must be difficult or impossible to determine exactly the influence which each exerts.

It has been thought by some that the interference of the respiratory function by pregnancy and pneumonic fever might be a cause of premature delivery.[11] I have never been impressed with the idea that this is the case, although I hold that such embarrassment is an indication for the production of premature labor if the child is viable.

My cases, in abstract, are as follows:

Case 2.—Mrs. M. G., aged 27, six months advanced in her third pregnancy, was taken, April 21, 1880, with the ordinary symptoms of pneumonic fever, the base of the right lung being the part locally affected. At 7 P.M. the pulse was 118, respiration 24 and temperature 101.6°. During the night she slept from 12 to 4 o'clock, being awakened by commencing labor pains. At 6 A.M. the pulse was 109, respiration 24 and temperature 101°. The os uteri was dilated to the size of a silver dollar, the membranes had just ruptured and the cord and right shoulder presented. The faulty position was rectified and a dead fœtus was at once expelled, followed in a few minutes by the placenta. The pulmonary inflammation, beginning at the base of the right lung, gradually crept upward until the entire lung was affected. The case was further complicated by a metro-peritonitis. On the seventh day there were well-marked tracheal râles, delirium and a tendency to a comatose condition. By the thirteenth day, however, she was convalescent, and soon regained her ordinary health. A year later phthisis developed, and she died from this malady about eighteen months later.

Case 3.—Mrs. A. C., aged 26, seven months advanced in pregnancy, was attacked, March 20, 1880, with pneumonic fever, affecting locally the base of the left lung. The case ran a very severe course, with typhoid symptoms, but convalescence began on the eighth day and she carried to full term.

Case 4.—Mrs. H. F., aged 25, two months advanced in her second pregnancy, suffered an ordinary attack of pneumonic fever, locally affecting the base of the right lung, and recovered in ten days without abortion.

Case 5.—Mrs. J. B., aged 40, two months advanced in her sixth pregnancy, passed through a mild attack of this disease, affecting the right lung, in seven days without aborting.

Case 6.—Mrs. J. S., aged 35, eight months advanced in her sixth pregnancy, was seen, in consultation, just as she was entering upon convalescence from an attack of pneumonic fever, locally affecting the base of the right lung. She carried to full term.

Case 7.—Mrs. S. S., aged 20, seven months advanced in her first pregnancy, was taken, January 11, 1879, with the ordinary symptoms of pneumonic fever, affecting the base of the right lung. On the seventh and ninth days the pulse had fallen to 90, and the temperature to 96° and 95°. On the tenth day she was suddenly delivered of a living child, which died in two days. Two days later a very severe attack of diphtheria began, but she eventually recovered.

Case 8.—Mrs. F. R., aged 35, eight months advanced in her eighth pregnancy, was taken, December 2, 1878, with the ordinary symptoms of pneumonic fever, locally affecting the upper lobe of the left lung. The malady pursued an ordinary course, with a temperature curve not exceeding 102°, until the sixth day, when she was delivered of a living child, which died after a few hours. There were no premonitions of labor. She had been sleeping for hours when she was awakened by labor pains, and was at once delivered. Resolution began on the ninth day and the patient was soon well.

Case 9.—Mrs. H. W., aged 22, eight months advanced in her second pregnancy, was attacked, December 23, 1878, with pneumonic fever, locally affecting the lower and middle lobes of the right lung. The disease ran a mild course and the patient was convalescent on the eighth day, on which day there were threatenings of premature labor which were speedily relieved by appropriate treatment, and she carried to full term.

In those cases of pneumonic fever in which pregnancy does not cause any impediment to free breathing, I do not think the condition exerts any influence indicating a modification of my ordinary treatment of the disease. Miscarriage under these circumstances is a decided evil, and if it were threatened, measures should be instituted for its prevention—if this is possible. But if pregnancy be so far advanced as to cause a considerable encroachment upon the

---

[9] Berliner klin. Wochenschr., 1880, No. 17.

[10] Volkmann's klin. Vorträge, No. 174.

[11] Duncan (Lancet, 1884, vol. 1, p. 471) claims that, because the transverse diameter of the thorax is increased, the respiratory capacity of a female at full term is not always diminished.

respiratory capacity, from the amount of lung consolidation and upward pressure from the uterus, with dyspnœa and great rapidity of breathing, as in my first case, I am prepared to strongly advocate the production of premature labor. The advantages of this measure are that, if undertaken sufficiently early, the child's life is almost certainly saved, with very great relief to the patient, and, judging from my limited experience, a favorable impression upon the disease and a lessening of the danger and mortality attending it. I should advise, therefore, that premature labor should be brought on as soon as the respirations become very frequent or the dyspnœa pronounced.

It might be supposed that labor would very greatly increase the danger, but I feel assured that this is not the case, but rather the contrary. In quite a number of cases in which premature labor has occurred in the course of febrile diseases I have seen the temperature and pulse decline and the other symptoms ameliorated, even during the progress of labor, and this has also been the case in the few of my cases of pneumonic fever which were so complicated. I should be glad to see this question fully discussed, believing that valuable light can be shed upon an important class of cases.

PROPHYLAXIS MORE IMPORTANT THAN REMEDIAL TREATMENT.[1]

BY T. R. BUCKHAM, A.M., M.D., F.S.Sc. (LOND.).

OF FLINT, MICHIGAN.

Although I have not given the subject which this Section has in special charge as much consideration as I have bestowed upon some other departments of our professional field, yet, I beg to outline, rather than to particularize, the importance of prophylaxis, especially in early infant life; and, while according the fullest measure of importance to the scientific treatment of diseases of infants and children, I wish to emphasize, in the strongest manner, the opinion, that if ever the fearful mortality among infants shall be so reduced as to rescue it from being classed as an *opprobrium medicorum*, it must be done by united, persistent, scientific preventive, rather than by remedial measures.

While embryocide and fœticide, technically considered, are not a part of our subject directly, yet it is a most melancholy fact, that were the debasing crimes extirpated there would be an immense number added to those who are properly within our domain; hence, although not directly, it is indirectly, a proper and most important matter for our consideration. There are no data on which to even approximately determine the extent to which this vice is practised, for the obvious reason that it is declared to be a crime and punished as a felony; therefore there are most cogent reasons for the perpetrators keeping it strictly secret. Notwithstanding the fact, however, that we are unable to furnish definite proof of the extent, it is an open secret that the number of lives destroyed is very large. It is a surprising fact that there are many intelligent wives and husbands who yet believe, or affect to believe, that there is no life until after the third month of pregnancy; *ergo*, there is no crime in destroying the embryo. While we may not be able to convince such persons of the scientific fact, which they do not wish to understand, that there is life from the moment of conception, we may, at least, wash our hands of guilt, by taking the necessary time and trouble to demonstrate the truth to them, so that if they persist in perpetrating the most revolting of crimes—destroying the fruit of their own bodies—they shall do so fully warned of their moral turpitude, and also of the physical danger to the mother. Could we but close that one flood-gate through which pours such a stream of embryonic and fœtal life, we could save more lives than by our united armamentaria of infantile remedial agents.

Before considering the diseases that directly belong to our Section, please bear with me while I call your attention to some statistics which will aid us in the investigation of the subject. The figures have been kindly furnished by the able Secretary of the State Board of Health of Michigan, or taken from Ziemssen's "Cyclopædia of Medicine." Of all the deaths in Michigan about 40 per cent. are of children under 5 years old, 2.55 per cent. die between 3 and 4 years of age, 3.67 per cent. between 2 and 3, 6.82 per cent. between 1 and 2, and about 26 per cent. under 1 year; of those who die under 1 year old, more than half die under 2 months, and, one-hird under 1 month old. Observe the astonishing rapidity with which the death-rate increases as we descend from 5 years of age toward birth. From 3 to 4, the percentage is 2.50, from 2 to 3, 3.⅔, from 1 to 2, 6.¾, and under one 26; 14 per cent. die under 2 months and more than 9 per cent. under 1 month old. To what extent can we reasonably expect our remedial agencies to control, in early infancy, the rapid course of disease which relentlessly hurries its tender victims to the grave, ere, as infants, they have fairly begun to live?

Have we always done our whole duty in actively, earnestly, warning the people, and in pointing out the road by which the danger, to some extent, at least might have been avoided? From about 9,000 deaths reported, occurring in the first year we find about 15 per cent. were nursed at the maternal font, while of those otherwise fed the percentage is 85; a difference of 70 per cent. in favor of natural feeding. Have we always earnestly and faithfully warned the devotees of fashion, who considered it little less than a calamity that they were mothers, of the onerous and sacred claim maternity laid upon them in the care of their offspring, and of the imperative duty of providing a healthy wet-nurse, if they could not, or would not themselves furnish their infants with natural sustentation? While urging in the strongest manner that mothers should nurse their children, of course exception must be made where, from debility, the life of the mother would be endangered by the tax upon her vitality by nursing, or where, from maternal disease, the milk would be injurious to the

[1] Read in the Section on Diseases of Women and Children, at the Thirty-Seventh Annual Meeting of the American Medical Association.

child. When, for sufficient reasons infants must be fed artificially, the most careful and minute details should be given to nurses and mothers as to the care and feeding of their delicate charges. I shall not occupy your time in stating what directions should be given, but I will say that I know of no more trustworthy directions than those given by Dr. Jacobi on the subject of infant feeding; and I would call especial attention to the value of barley-water as a diluent of the milk according to his recommendation. With the utmost deference, however, I remark that my experience, limited as it is in comparison with his, would lead me to dilute the milk to double the extent that he advises. Possibly the difference of opinion lies in the original richness of the milk used. In country towns we have plenty of fresh rich milk from Jersey cows; while in large cities I have often been served with milk so thin and blue that I judged its bulk had at least been doubled by too close proximity to the town pump.

While our chief attention should at first be directed to alimentation, I need not remind you that in the second year the source of danger largely changes from the alimentary to the respiratory system. "In the first year of life, stomach and intestines, in the second bronchi and lungs are the sources of increase of the death-rate. The respiratory organs are better protected habitually, in the first year and the digestive organs more improperly treated. Those infants who survive the first, are exposed to the same parental ignorance and carelessness concerning the requirements of the organs of respiration in the second." There is another factor in the diseases of infants and children which ought to be always born in mind: *i. e.*, the great relative disproportion between the weight of brain to body in infants as compared with adults. The weight of the male infant brain being in proportion to its body as about 1 to 5.85, while that of the male adult is about 1 to 46, and this proportion slightly diminished, is also true of the medulla spinalis, which wields such absolute sovereignty over infantile movements.[1] It naturally follows, that with nerve centres almost eight times as large in proportion in infants as they are in adults, that the nervous susceptibility and irritability must be very much more acute, so that it is not a surprise to us when we find that which would be a severe chill in a grown person, is generally a convulsion in an infant; hence, we cannot too carefully guard from irritation their brains and spinal cords on account of the augmented danger both direct and reflex. From the fact that there is so much more to be dreaded from the respiratory organs during the second year, we should consequently urge the absolute necessity for their being always warmly clad, breathing pure air, and being carefully guarded from sudden changes of temperature, and in many localities we may find it to be our imperative duty, unpleasant as the task would be, to even urge personal cleanliness upon the nurse or mother.

The advantages that would arise from well-directed efforts on the part of physicians, boards of health, and civic officers to enforce strict hygienic regulations among the poor and vicious cannot well be over-estimated; as, apart from the direct mortality involved, it is in such quarters that most of our epidemics have their origin, and thus they indirectly imperil the lives of thousands upon thousands. Much has already been done in this direction by boards of health, but very much remains yet to be done. Let us give such boards of health, and all agencies having a like object in view, our active aid, as individuals; and, as a profession, our earnest outspoken support; especially should this be the case in overcoming the repugnance of the ignorant, and sometimes of those who ought to know better, to having the subject of infectious or contagious diseases put under proper quarantine, or when quarantine is impracticable then to the enforcement of the most complete isolation possible.

I trust my motives will not be misconstrued, in referring here briefly to my plan of prophylaxis of diphtheria. The details were published some twelve years ago in the Detroit medical journals, and about two years ago were referred to by THE JOURNAL. The theory is a very simple and, I think, rational one, being an assumption that the remedies which cure the disease, will prevent its development in those who have been exposed to the contagion, and therefore to all who have been exposed, or are of the household, treatment similar to that for the diphtheritic patient is administered for from six to eight days; and, permit me to add that where the medicine was faithfully administered, I have yet to see the first case in which the disease was not confined to the original patient; and further, to show the severity of the tests to which the prophylaxis was subjected, several of those first taken died, in spite of all that I and the best counsel I could obtain, could do to save their lives. I may also mention that I have received a large number of letters from Maine to California and intermediate points, in which the writers, with very few exceptions, narrate experiences in that direction similar to my own. Notwithstanding these favorable results, I no not assert that the prevention will always be as complete as in the cases to which reference has been made, because those reported to me, or which have come under my own observation are too insignificant in number, compared with those of which I know nothing, to warrant a universal conclusion; but I think enough observation has been made, and with results sufficiently favorable, to warrant my asking for the plan a fair trial, as, if it shall prove trustworthy as a prophylactic, independent of the benefit to those who have been exposed, there are few households which cannot take exclusive care of *one* sick member, and hence, the risk from the spreading of the devastating disease will be reduced to the minimum.

Of the advantages of vaccination as a prophylactic, I do not now think it necessary to say anything. Years ago, when we were compelled to use

[1] Tiedeman gives the same proportionate weight of infant brain, but gives that of the adult at 1 to 36 instead of 46. From a somewhat extensive investigation of the subject while preparing my work on "Insanity," I am satisfied that his comparative relation is erroneous, as the average male brain is from 49 to 50 ounces; hence, at his proportion, the average weight of a man would be less than 112 pounds, and his height less than 5 feet.

humanized virus, and some times had to admit that syphilis and other diseases had been inoculated with the vaccine, I confess I had often grave doubts of the benefit, as a whole, of that method of preventing variola, but now that pure bovine virus can readily be obtained all doubts respecting the great boon conferred by Jenner have disappeared.

SYSTEMATIC INSTRUCTION IN COOKERY AS A BRANCH OF COMMON SCHOOL EDUCATION.[1]

BY GEORGE H. ROHÉ, M.D.,

PROFESSOR OF HYGIENE AND CLINICAL DERMATOLOGV, COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE, MD.

"The number of inhabitants who may be supported in any country, upon its internal produce, depends almost as much upon the state of the art of cookery as upon that of agriculture." (Count Rumford, Complete Works, vol. iv, p. 407.)

It is needless to call the attention of the members of this Section to the great importance of a sufficient supply of digestible and assimilable food for the maintenance of health. Physiologists have determined, both by experiment and empirically, that the different classes of food-stuffs—proteids, fats, and carbohydrates, with salts and water, must be consumed in definite proportions, if the individual's health shall be preserved. It is equally unnecessary to argue in favor of having all the various articles of food used by man of good quality and free from deleterious properties, because the sanitary conscience of every individual, no less than the physical reactions of the system, demand that healthy meat, fresh vegetables and pure water are food constituents absolutely requisite for perfect nutrition.

While, however, these propositions are accepted without dispute, it seems to be considered of minor importance how food is prepared before being taken into the stomach. Most persons, including, I am sorry to say, the large majority of physicians, are wofully ignorant of the chemistry of cookery. The changes that take place in food during its preparation for the table are not only imperfectly understood, but many physicians and nurses seem to consider it beneath their dignity to give the subject any serious thought. To say nothing of the almost universal ignorance of the culinary art, I merely call attention to the grave errors that prevail among the profession in regard to the nutritive value of meat essences, soups or teas, or of boiled meats. One hears much from quasi-professional and lay sources of the wholesome character of what is called "simple cookery." But, in the majority of instances, simple cookery means simply bad cooking. Frying, as the operation is usually done in this country, constitutes the basis of American simplicity in the culinary art, and all physicians are agreed that probably no other single factor is so prominent in the production of our national disease, dyspepsia, as this. I do not desire to be understood as condemning frying or any of the modifications of this process of cooking, when properly done. On the contrary, I think it is an excellent method of preparing meats, fish, and many vegetables for the table. But how rarely is the American frying-pan anything else than a utensil for slowly stewing an article in grease! Saturated and permeated with fat, the fried article of food becomes an indigestible mass, incapable of acting as an aliment.

The healthy common sense of many Americans, who have given thought to this matter, has led to the establishment of cooking schools in various cities, and in connection with some scholastic institutions, in this country. In a special report on "Industrial Education in the United States," issued by the Bureau of Education in 1883, reference is made to a number of schools of instruction in the culinary art. In Lasell Seminary, at Auburndale, Mass., cooking has been taught since 1877. In the same year, this branch of domestic economy received recognition in the Iowa Agricultural College, and the instruction seems to be very thorough, both on the theoretical and practical sides of the subject. A School of Domestic Science was also organized in the Illinois Industrial University in 1874, but the instruction in the chemistry of food and cooking seems to be largely didactic. At all events, the account of this institution in the report above referred to does not indicate that any practical instruction is given in cookery. Of cooking schools proper, I believe that of Miss Juliet Corson, known as the New York School of Cookery, was the first in this country. It was established in 1876, and has been the forerunner of a number of similar institutions in various cities. The Boston Cooking School was started about 1877, and conducted by Miss Parloa. In Baltimore, a wealthy gentleman, Mr. Chas. J. Baker, has given a handsome building especially constructed for a model cooking school. The institution was opened in 1884, but has unfortunately languished, apparently on account of lack of experience on the part of the board of management.

In Raleigh, N. C., Staunton, Va., and Washington, D. C., cooking schools have been put in successful operation. In this movement in the South, Miss Helen Campbell, a well-known writer upon social and domestic subjects, has been a prominent and successful worker. A private cooking school was in operation in Memphis in 1879. Cooking classes have also been formed under the auspices of the New Century Woman's Club, of Philadelphia. Practical and systematic instruction in cookery and other useful arts is given to young women of limited means.

The limitations of institutions dependent upon private support are, however, too contracted to permit the full development of this necessary reform. The absence of a sufficient number of paying pupils for a single term, may seriously cripple, if not entirely break up a private cooking school. This has happened in one instance known to the writer. In order to avert such insecurity, cooking should be made a part of the curriculum in the public schools. Time for the introduction of a new subject of such vital importance could be obtained by dropping some of the highly ornamental "studies" with which the cur-

[1] Read by Title in the Section on State Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

ricula of most of our girls' schools are crowded. "Mental philosophy," trigonometry and technical grammar could with very great advantage be replaced by practical instruction in household economy, and doubtless some time could also be gained for a little needed instruction in private and domestic hygiene.

This idea is not Utopian. In London, practical lessons in cooking are given in the girls' common schools. In this country the same thing has been carried into practical effect in the city of Boston. For several years volunteer efforts have been made by Mrs. Augustus Hemenway, of that city, to give instruction in cooking to a number of girls selected from the upper classes of the grammar schools. The results attained had a good effect upon the members of the school board, and for the present year cookery has been made a regular part of the curriculum in the girls' schools. This pioneer effort should be quickly followed in every municipality in the United States, and I would urge upon the members of the Section on State Medicine and Hygiene to endeavor to secure similar action in the States they represent.

139 N. Calvert Street, Baltimore.

TREATMENT OF PUERPERAL MASTITIS

By the External Use of Spirits of Turpentine.[1]

BY P. J. MURPHY, M.D.,

SURGEON IN CHARGE OF THE COLUMBIA HOSPITAL FOR WOMEN AND LYING-IN ASYLUM, WASHINGTON, D. C.

In the *Medical Record*, of July 31, 1885, page 123, appears the following article by Dr. Llewellyn Eliot, of this city: "About fifteen years ago I witnessed the beneficial effects of the free application of spirits of turpentine to abscesses and whitlows in their early stages. The result in each case in which such applications were employed was a drying up and disappearance of all traces of inflammatory or suppurative processes. From the earliest years of my professional life this has been a routine treatment with me, and arguing from analogy, it has been adopted in cases of mammary abscess when seen in its incipiency. The only disadvantage attending this treatment is the odor of the turpentine, which is of no importance when contrasted with the intense pain, sleepless nights, and suffering accompanying suppuration of the gland.

"If, upon the discovery of a drawing pain upon suckling, or a tender, hard spot in any part of the gland, the part be bathed with the spirits of turpentine, and then covered with a cloth, rag, or piece of flannel saturated with the same, we may, as a rule, look for the disappearance of the hardness, the tenderness, and all other uneasiness attending this troublesome affection, in the course of two, or at the most three days. During the course of such a treatment the child may be nursed from the affected breast, but not as frequently as from the well one. It is hardly necessary to say that all traces of turpentine should be washed away before such nursing. The amount of milk secreted has never appeared lessened in the cases observed, nor have any of the ill results of the continued use of turpentine followed either in the mother or in the child. Whether this manner of dealing with this affection be in general use or not cannot be said, still, there is no mention of it in many of the recent text-books on obstetrics.

"It is not claimed to be infallible, but its application will be attended with no bad results, even if it be unsuccessful. Strapping, pressure, rest, applications of belladonna and soap liniment, and the continuous application of an ice-bag, are among the various modes of treatment employed; but my faith now centres around the application of turpentine as an abortive of mammary abscess."

I had not seen mention made, in any of the text-books accessible to me, of the abortive treatment of mammary abscess by the external use of turpentine, nor could I find any authority recommending it as applicable in reducing inflammation of the mammary gland. I determined, therefore, to give it a fair trial, and place before you the result in thirteen cases in which the treatment was carried out. In the limited clinical experience I have had in the employment of turpentine as a local and external means of treating internal inflammations, none of the severe smarting and vesication of the skin has occurred, and in the cases I am about to recite, a general sense of comfort and relief was experienced from its application.

There is, of course, to be observed the same precaution in the use of this agent as in any other remedy—*excessive use is often an abuse.*

Case 1.—A. B. Child lived but a few hours. Breasts bandaged and became hard, some milk being secreted. Spirits of turpentine applied as a lotion and bandages left off. Milk secretion ceased and induration disappeared after a few applications.

Case 2.—A. P. Abortion at about six months. Some milk secreted on second day, and considerable induration accompanied it. Breasts bandaged and spirits of turpentine applied. Secretion of milk rapidly ceased and the induration as rapidly disappeared.

Case 3.—M. C. Breasts indurated, probably from over-secretion of milk. Spirits of turpentine applied a few times and hardness in breasts disappeared, and the super-lactation ceased.

Case 4.—M. L. Some induration of breasts, accompanied by marked over-secretion of milk. Spirits of turpentine applied three times, and induration passed away. The secretion of milk after this was of a proper quantity for child.

Case 5.—Alice G. Admitted twelve hours after delivery. The child had died. Some milk was secreted before admission, and considerable induration was present in the breasts. Spirits of turpentine applied twice daily for ten days, and secretion stopped. The induration ceased five days before.

Case 6.—L. L. Quantity of milk small; child did not nurse; breasts became hard. Spirits of turpentine applied for two days and the induration disappeared; the secretion of milk ceased.

Case 7.—S. W. Still-birth at eight months; some induration as secretion of milk began. Applications of turpentine made and induration passed away; the secretion of milk ceased.

---

[1] Read before the Medical Society of the District of Columbia, on November 3, 1886.

Case 8.—F. R. Still-birth. Breasts became indurated and spirits of turpentine was applied freely. Some milk was secreted after thirty-four hours. Turpentine continued and milk flow arrested in a few days.

Case 9.—F. J.—Child removed by friends after milk was secreted. Considerable induration and fever occurred. Two applications of turpentine per day for two days was made. Milk secretion, fever and induration stopped.

Case 10.—V. M. Child did not nurse. Breasts became indurated and considerable milk was secreted; four applications of spirits of turpentine were made in two days, and milk secretion ceased. Induration disappeared at the same time.

Case 11.—K. M. Breasts indurated directly after beginning of lactation. Three applications of spirits of turpentine dispersed the induration. In this case, and at the same time, her temperature ran up to 103° F., and stayed above 100° until the breasts were in a normal condition.

Case 12.—M. R.—The secretion of milk from both breasts was unusually plentiful and hard lumps appeared in both glands in a short time. Spirits of turentine was applied four times. The induration rapidly disappeared and the supply of milk was considerably lessened.

Case 13.—J. H. Was nursing child up to day of entering hospital. Breasts very large and full of milk. Did not begin treatment with spirits of turpentine until second day. Applications were made three times a day for one week, and secretion of milk ceased. There was *at no time* any hardening of the breasts.

In *none* of the above cases were alteratives, as iodide of potassium, iodine, etc., used; nor were revulsives employed.

One clinical feature wherein I differ from the experience of Dr. Eliot is, that the application of turpentine either in part checks the mammary secretion or entirely arrests it. This is amply proven in the cases above cited. I do not mean to be dogmatical in this assertion, and merely call attention to this fact in order that the experience of others may lead us to form a just conclusion as to when and where we are to make use of this remedy, if at all.

You are all familiar with the various agents adopted in the prevention of mammary abscess. Most of them have been pointed out in the brief article by Dr. Eliot; some are eminently successful in certain cases and again fail, much to our chagrin. All of them have had a fair trial in my experience, with alternate failure where I expected success and success when I had little faith in their beneficial influence.

Then, again, cases yield very slowly to turpentine applications, the hardness and induration passing away very rapidly in some and persisting for weeks in others.

If this agent prove as efficacious as my experience guarantees in the preventive treatment of puerperal mastitis, the *bête noire* of the lying-in hospital will have vanished, and hundreds of suffering women be relieved from pain and agony. But this remains to be proved, and I bring the matter to the notice of the Society for this purpose, and to give Dr. Eliot due credit for calling attention to such a valuable remedy.

MEDICAL PROGRESS.

HOT WATER AS A HÆMOSTATIC IN OBSTETRIC AND GYNÆCOLOGICAL PRACTICE.—The value of hot water injections in menorrhagia was proved many years ago by Trousseau, and for their general use in the diseases of women we are indebted especially to Emmet. Parvin, in 1876, called attention to the use of hot water in arresting hæmorrhage from ruptured adhesions in ovariotomy. Courty first applied this agent as a hæmostatic in plastic operations upon the external genitals and the vagina. The late Albert H. Smith was one of the first, if not the first, to advocate intrauterine injections of hot water in the treatment of post-partum hæmorrhage. Yet it is probable that the value of hot water is not fully recognized by the profession, nor do all seem to know at what temperature the application should be made.

Within a few years one of the most distinguished of German obstetricians has asserted that relaxation of the blood-vessels was the remote consequence of hot water injections, though contraction occurred at first. A very useful and timely contribution to the subject has recently been made by R. MILNE MURRAY, in the *Edinburgh Medical Journal.* He studied, experimentally, the effects of water at different temperatures, and found that, at 110° to 120° Fahr., it constricts blood-vessels and arrests hæmorrhage from small arteries; at a temperature of from 60° to 100°, it dilates small vessels and promotes hæmorrhage; and at a temperature of from 30° to 50 it checks hæmorrhage by constricting the blood-vessels, but this only temporarily.

In regard to its therapeutic application in inflammations, Murray claims that it is evident that in water at 120° Fahr. we have an agent of immense power in controlling the local circulation in an organ, provided we can bring the water to bear directly on the part. Accordingly, a stream of hot water injected into the vagina cannot fail to affect, in a very direct way, the circulation in the uterus. The smaller blood-vessels will respond in such a manner that their calibre becomes narrowed under the stimulating effect, the abnormal blood supply will to a large extent, be cut off, and the resulting phenomena of inflammation checked.

Uudoubtedly hot water vaginal injections are useful in some cases of pelvic inflammation, but to claim for this treatment constant success and constant applicability is, we think, an error. Patients are met with in whom great discomfort follows its employment, when it should be discontinued. In considering the use of hot water in obstetric practice, Murray divides the cases into those in which the contents of the uterus have not been discharged, and those of actual or threatened post-partum hæmorrhage, the placenta having been expelled. He states, in referring to the first class, that in all cases in which the abortion is inevitable, hæmorrhage going on, and the os dilating, he adopts hot water injections as a routine practice. He regards the agent as being most valuable in those cases in which hæmorrhage is ocurring or is imminent after the contents of the uterus

have been expelled, and that organ remains flabby and relaxed. Among the benefits claimed for hot water thus used are rapidity of action, duration of the tonus produced, and the absence of vascular reaction, and of exhaustion. This agent in the treatment of post-partum hæmorrhage certainly deserves all the commendation which it has received.—*Medical News*, December 4, 1886.

The Danger of Wounding the Diaphragm in Operations for Empyema.—M. Lagrange says (*Archives Générales de Médecine*, Sept. 1886) that wounding of the diaphragm in operating for empyema is an accident the conditions of which it is necessary to know in order to avoid. He holds that it is a mistaken idea to suppose that the accident is rare, and cites cases in which it occurred when the seventh intercostal space was opened, and Kirmisson on one occasion found the diaphragm as high as the sixth intercostal space. This anomalous position of the diaphragm may be caused by adherence of that structure to the lung, with retraction of the lung or retraction of the parietes of the thorax, with consequent exaggeration of curve of the diaphragm; and it is a mistake to suppose, as is stated in the text-books, that pleural effusion is always accompanied by descent of the diaphragm. In many cases it is impossible to tell the exact position of the diaphragm, especially when it is intimately adherent to the thoracic walls. He advocates strongly that the operation of opening the pleura for the evacuation of pus should never be performed lower than the fifth intercostal space. Cases are recorded where the diaphragm has been wounded, and even the abdominal cavity opened and some of the contained viscera incised. At the Montreal General Hospital it has been the custom of late to open the pleural cavity low down, not uncommonly in the eighth and ninth spaces. I myself have frequently done this, and without any untoward result. The diaphragm can always be felt through the incision. It is a good plan, and one which I have always adopted, after cutting through the tissues down to the pleura, to use a dressing forceps, if nothing but pleura intervenes it is easily perforated, and pus immediately exudes; but if diaphragm be present, the forceps cannot be pushed through it without the exercise of considerable force, and the condition may be recognized before harm is done. The value of a low opening is very great, because we thus thoroughly empty the pleural cavity and run no risk of leaving the narrow posterior portion filled with pus. If the opening be made high up, this cavity cannot be thoroughly evacuated without washing out with some fluid, a proceeding which always complicates the operation, may introduce septic matter, and retards healing.—*Canada Med. and Surg. Journal*, December, 1886.

The Action of Antipyrine.—There is an almost universal verdict that in antipyrine we have a most powerful antipyretic. That it is certain and quick in its action is generally conceded. There is no doubt that it is more certain and more rapid in its action than all agents of this class used up to the present time, with the exception of cold water. Occasionally, however, we notice reports of disagreeable and even dangerous untoward effects, where it has been administered to reduce an elevated temperature. Dr. Graham, of Brussels, reported a case last winter where alarming symptoms of collapse followed its administration to a typhoid patient. In the *British Medical Journal* for October 2d, 1886, Dr. Fairland reports a similar alarming state where it was given to a typhoid patient. The German medical periodicals of the current year contain a considerable number of reports pointing to a like action. The question naturally arises, Is it possible to obtain all the benefits of antipyrine and at the same time to avoid its untoward effects on the circulation? We believe this can be answered in the affirmative. Antipyrine can be given in such a way as to almost preclude the possibility of its acting as a cardiac depressant. It is simply a matter of dosage. The dose should *never* exceed 20 grains; doses of 30 grains and upwards are dangerous. When given in quantities of 10 grains and repeated every hour or two until the temperature reaches 101° F., the danger of collapse is practically *nil*. To give larger doses, or to reduce the temperature to below the normal even with less quantities, is not safe.

Many able physicians question the utility of any agent that simply acts as an antipyretic in febrile diseases. They contend that nothing is gained by simply reducing the temperature for a few hours. When the course of the disease is not in any way modified, how is the patient benefited? they ask. Are not the evils arising from the disturbance of the patient's nervous and digestive systems greater than the supposed gain we obtain by lowering the temperature? When we consider the direct pernicious influence that a continuous high temperature has on the nerve centres and muscular tissues, we believe we have quite sufficient justification for the use of those agents whose only effect is to reduce the temperature. The acute granular and fatty cardiac degeneration which is so frequently an active factor in the causation of deaths from typhoid fever and pneumonia, must surely be in some measure prevented or delayed by the judicious use of such an agent as antipyrine.—*Canada Med. and Surg. Jour.*, December, 1886.

Analgesic Properties of Solanine.—Solanine belongs to the class of poisons which includes eserine, philocarpine, atropine, etc., the first physiological effect being to paralyze the nerve terminals of the non-striated muscular fibres. There are, however, certain differences in the particular action of solanine which Dr. Geneuil proposes to utilize in medicine. The alkaloid may be prepared from the fresh seed of potato by means of boiling water slightly acidulated with sulphuric acid; ammonia is added to the hot decoction, precipitating solanine and phosphate of lime. The alkaloid is then dissolved out with alcohol and evaporated to crystallization. These crystals are insoluble in water, but slightly soluble in ether, readily so in hot alcohol. It is colored orange by

strong sulphuric acid, turning to deep violet and brown. With acids salts are formed. The hydrochlorate of solanine is obtained by dissolving solanine in alcohol, to which hydrochloric acid has been added, and precipitating the salt with ether. It forms a gelatinous body readily soluble in water. In doses of from 1 to 3 grains its action is confined to the medulla and cord, but in larger doses the cerebral cortex is also affected, the symptoms being vertigo, heaviness and noises in the ears. In poisonous doses there is violent headache, followed by delirium, cyanosis, and somnolence. Respiration is rendered deeper and slower, the pulse is not affected by the drug in medicinal doses. Its administration by the mouth in large doses is apt to give rise to nausea and vomiting with a desire to defæcate. In the stomach solamine is transformed into solanidine and glucose. Generally speaking the pupil is not dilated. Dr. Geneuil has found solanine of the greatest service in the treatment of sciatica and rheumatic neuralgia in doses of from 3 to 4 grains daily by the mouth or hypodermically. He has also used it in prurigo, cystitis, and in certain nervous affections where restlessness and insomnia were prominent symptoms. He has found it useful in acute dyspepsia and gastritis, lessening the pain and spasm, and good results have followed its administration in the obstinate vomiting of pregnancy. He recommends it strongly in the treatment of bronchitis, bronchial asthma, cardiac asthma, and emphysema. Solanine, he says may be prescribed without danger in large doses, and its use is not attended by the same inconveniences as morphine and atropine. It is particularly in lieu of the former that he finds it of service, especially in children.—*London Medical Record*, November 15, 1886.

RESECTION OF THE TARSAL BONES IN CLUB-FOOT.—In a paper read at the Fifteenth Congress of the German Society of Surgery, DR. KRAUSS, of Darmstadt, brought forward objections to those methods of treating club-foot, which consist in removal of portions of the skeleton of the foot, and in attempts to straighten the extremity by forcible manipulations. The author thus briefly states his views: 1. The different methods of resection of the tarsal bones impair more or less the form of the foot, the stability of its osseous arch, and the dependent mobility and usefulness of the extremity. On the other hand, a club-foot that has been successfully submitted to orthopædic treatment and tenotomy present a much-improved form, which, especially in young subjects, deviates very little, if at all, from that of the natural foot, and the usefulness of which will correspond with the innervation of its muscles. 2. Resection of the tarsus is not free from risk, whilst orthopædic treatment with tenotomy is quite safe. 3. Extirpation of the astragalus is a more suitable operation for restoring the form of the foot, than removing a wedge-shaped piece of the bones in the direction of the medio-tarsal joint, but it leaves an immovable or insufficiently movable ankle, a week union between the os calcis and the second row of tarsal bones, and serious shortening of the foot. 4. Resection of a portion of the tarsus spoils the skeleton of the foot to such an extent, that its performance removes almost all chance of a future restoration of the natural form of the extremity, and of its natural functions, by means of suitable orthopædic treatment. 5. There is no conceivable form of club-foot in which tarsal resection is justifiable, except it be in a case of one that is persistently painful in an old subject, and in which there is no prospect of good result from orthopædic treatment. In such a case resection might fairly be tried instead of amputation.—*London Medical Record*, October 15, 1886.

COFFINS IN THE CHURCH PORCH.—A correspondent calls attention to the practice, sanctioned by the clergy, of allowing the coffin to be brought into the church during the early part of the funeral service which takes place inside the church. In some parts of the year, this is not only offensive but even dangerous to those who sit by the decaying human tabernacle, and no possible good can result from it. The idea of bringing the corpse inside the church is, our correspondent points out, a superstition which came in about the fourth century, when the apostacy from the early faith began. The coffin, as is pointed out, might as easily be left in the porch. This is a matter to which attention may well be directed, and members of the profession would do well to endeavor to influence the clergy in favor of some change in respect to this ancient but unsanitary custom.—*British Medical Journal*, November 13, 1886.

TREATMENT OF SYPHILITIC CONDYLOMATA.—DR. A. G. PARSONS, of Durham, N. C., writes that he has tried the following ointment in many cases of syphilitic growths on the scrotum, and around the anus, and has never met with a failure:

℞. Morph. sulph. ..... gr. ij.
Pulv. camphor. ..... gr. xx.
Bismuthi subnitrat.,
Hydrarg. chlor. mitis. ..... aa ʒ jss.
Cosmolin. ..... ʒj

Sig. Wash with soap and water, and then rub the ointment in twice a day. In a few days Dr. Parsons says, the warts will be found to have entirely disappeared.—*Medical Record*, November 13, 1886.

TREATMENT OF ORCHITIS AND EPIDIDYMITIS.—MR. LOWNDES describes the treatment adopted at the Liverpool Lock Hospital for cases of orchitis and epididymitis. The affected testicle is painted with a solution of nitrate of silver (two drachms to the ounce), at the same time strict rest in bed is enforced, and the inflamed organ is supported upon a small pillow. When the patient is compelled to go about his ordinary work, the painting of nitrate of silver tends to cure the case more rapidly, but it does not get well so quickly as those that take complete rest in bed. [In 1868 Mr. Jordan cured cases in twenty-four hours.]—*London Medical Record*, October 15, 1886.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, DECEMBER 18, 1886.

DRUMINE—THE NEW LOCAL ANÆSTHETIC.

The characteristics and properties of the Euphorbiaceæ are so multiple and so different, that it is scarcely a matter of surprise to learn that one of the order has now been shown to yield an anæsthetic. DR. JOHN REID, of Port Germein, South Australia, has recently obtained a local anæsthetic from Euphorbia Drummondii, and this drug, for want of a more convenient term, he calls *Drumine*, until chemists give a better name. In his experiments he used the hydrochlorate, *Drumini chloridum*, very soluble in water, and obtained in the following manner: A tincture is made with rectified spirit (though he believes proof spirit would answer, especially if acidulated with hydrochloric acid). After standing a few days it is evaporated to get rid of the spirit, ammonia is added in excess, and the solution filtered. The residue, after the ammonia smell is gone, is dissolved in dilute hydrochloric acid, and the filtrate is filtered through animal charcoal to destroy the abundant coloring matter, which is inactive medicinally, but causes a bluish tinge of the skin. The filtrate is evaporated slowly, and leaves the alkaloid. It gives a colorless solution with little taste, almost insoluble in ether, freely soluble in chloroform and water, and depositing from solutions microscopic colorless acicular and stellate crystals, the latter being more numerous in the deposit from aqueous solutions. Roughly speaking the length of the crystals is about one to twenty diameters of a white blood corpuscle (or from 4 to 260 mmm.). Those deposited from hydrochloric acid solution, are filtered through animal charcoal, are circular or boat-shaped at the circumference, and stellate, or perhaps more correctly, discs, as if formed of concentric circles, and with radiating or other fissures. Under high power the acicular crystals are sometimes of a rhomboid shape, and seem less soluble in chloroform; from which it may be suspected that there are two alkaloids, though Dr. Reid was unable to investigate this point.

Dr. Schomburg, of the Adelaide Botanical Gardens, who determined the species of the plant for Dr. Reid, states that many sheep and cattle are annually killed by eating it, and that it is more poisonous according to the quantity of milky juice which it contains. It is said that animals die within twenty-four hours to seven days after eating it, all being paralyzed in the extremities, and some hanging the head as though intoxicated, though the appetite does not seem to be impaired. It is also said that yellow eyes, and even jaundice, occur in some cases. Its most remarkable and valuable effect, however, is that of causing local anæsthesia. When a few drops of a watery solution, estimated at 4 per cent., was dropped into the eye of a cat, the eye was found in a few minutes to be tolerant of contact with the finger, and the orbicularis muscle did not contract firmly as did the other. The pupil was not appreciable dilated. Three grains injected subcutaneously into the back had no other apparent effect than local anæsthesia. When Dr. Reid applied it to his tongue, nostrils and hand very marked anæsthesia was produced; even the sense of taste for quinine was abolished on the side of the tongue to which it was applied. Small doses taken internally seemed to produce no constitutional effects. In a case of sciatica in an old man, in which he had tried iodide of potassium and ammonia, the first hypodermatic injection of 4 minims of a 4 per cent. solution, enabled him to stand and walk in a short time with comparative ease, the pain having disappeared. A second injection, on the following day, acted as well, and at the time of writing the report the pain had not returned. Dr. Reid used it for cases of sprain, and the "speedy effect is probably sufficient to allow us to bid farewell to evaporating and lead lotions. I have seen it work like magic in a boy, (boil?) the dose being the same, and injected over the adductors of the thigh. For tic I have dropped it into the eye and applied locally with success."

In regard to the physiological action of drumine: "Where death arose from an overdose of the drug, paralysis of the extremities occurred. . . and we may suppose that the posterior cornua of the cord (sensation) are primarily affected, the poison passing to contiguous parts. I am very much inclined to be-

lieve that reported cases of paralysis are neither more nor less than cases in which movements remain, but the sense relations with the external world exist to a very limited extent, while motion is still possible. . . It will be seen that strychnia, as an antidote, affects only the motor parts, while there is *possibly an antagonism* to a slight extent between chloroform and the drug. . . There seems to be no special action on the pupil, although the cornea is insensitive by local application. In no case have convulsions followed its use. To sum up: cocaine seems to have a mixed action, sensory and motor, to cause preliminary excitement—Drumine is almost a pure sensory (no action on the pupil) paralyzer, without preliminary excitement; can be given with comparatively slight, if any, risk. A fungus is generated in the drug solution after some days. Its uses may be summed up as follows: Nerve troubles of a painful character, not due to a constantly exciting cause which remains potent, operations, irritation, œdema, sprains and such like; but I believe there is a brilliant future for this drug in the domain of cerebral physiology on account of its almost purely topical action. For hydrophobia, and croup with spasms, it would be used fearlessly and applied either to the nostril, by spray, or with a very fine hypodermic needle into the larynx. Those daring spirits who inject antiseptics, *e. g.*, corrosive sublimate to the phthisical lung, will probably, in this drug, find a valuable adjunct. Let us hope, from its causing no preliminary excitement, it may be useful in peritoneal and bowel ailments of a painful nature, whether by hypodermic needle or by the mouth. Writer's cramp and its congeners appear to indicate its use." In cases of poisoning by it Dr. Reid would recommend Epsom or Glauber's salts alone, or combined with tartar emetic in small doses, with plenty of fresh food, in order to eliminate it and act antidotally.

Of course the correct interpretation of facts, on untrodden ground, with a limited supply of a drug, and without such apparatus for manufacture and experimentation as would be desired, is very difficult; and certainly no one would be inclined to quarrel with Dr. Reid for not telling us more about *Drumine* —on the other hand, the world is his debtor, especially that portion of the medical world which is in the habit of making annual addresses, and which has been ringing the changes on cocaine for two years. Let us hope that, so long as they have no new facts to present, they will at least give part of their attention to *Drumine*. Dr. Reid's interesting paper may be found in the *Australasian Medical Gazette*, of October 15, 1886.

THE GENERAL MEDICAL COUNCIL OF GREAT BRITAIN.

This body, as is generally known, has the supervision of medical education and registration of those legally qualified to practice in the United Kingdom, and until the present time it has been composed of representatives appointed by the Crown, the Universities, and the Corporations or Royal Colleges of Physicians and Surgeons. By an amendment to the medical laws, adopted by Parliament in the early part of the present year, provision was made for the addition of five members to the General Council, to be chosen or elected by the profession at large. The object was to give the whole body of registered members of the profession, and especially the general practitioners, a voice in the General Medical Council. As might have been expected, many candidates were announced either by themselves or their friends, and a very general interest developed in the election. Three of the new members were to be elected in England, one in Scotland, and one in Ireland. The results of the election show that fourteen candidates were voted for in England, three in Scotland, and two in Ireland. Of the fourteen candidates voted for in England Dr. Claudius Galen Wheelhouse, of Leeds, received 8,548 votes; Sir B. Walter Foster, of Birmingham, 7,718 votes; and Dr. James Gray Glover, of London, 6,619 votes. The next two highest on the list were Dr. B. W. Richardson, of London, 4,705, and Dr. Thomas M. Dolan, of Halifax, 3,063; while the votes for the remaining nine candidates ranged from 1,223 down to 214. Of the three voted for in Scotland Dr. William Bruce, of Dingwall, received 661 votes, being a plurality of 51 over the next highest candidate. In Ireland Dr. George Kidd, of Dublin, received 1,212 votes, it being 287 majority over his only competitor. A large majority of the candidates were general practitioners, and those elected are to be regarded as pledged to represent the real interests of this important part of the profession.

AN ANATOMY ACT NEEDED IN MARYLAND.

Recent dispatches from Baltimore state that a most horrible murder was committed on December 10 for the purpose of securing the body of an old woman for the dissecting room of the University of Maryland. The fact that there had been foul play was discovered by Dr. Herbert Harlan, the Demonstrator of Anatomy, and it is thought that the negro janitor is implicated. The details of the affair have no medical interest, and need not be described. The fact that in this day the dissecting room of a medical

college, situated in a large city, or anywhere, should be dependent upon grave-robbers is, however, worthy of comment; to say nothing of the possibility for crime afforded by such dependency. It is not difficult to make a Legislature see that human bodies are necessary for medical colleges, or to get them to pass laws which will bring dissecting material to the colleges without the possibilities of grave-robbing or crime. At present enlightened, and even uneducated, people can be easily made to see that dissection is a necessary part of a medical education. But the practice of receiving bodies torn from the grave is one that brings the profession into a certain amount of disrespect, or disrepute, even among people whose sensibilities are not extraordinarily fine. It is about time that the medical profession of Maryland, and other States which have no anatomy acts, should exert themselves to the utmost in order to have proper provision made for supplying their medical colleges with dissecting material.

DIED.—At Pasadena, Cal., December 4, 1886, Edith Cole Scott, wife of Dr. X. C. Scott, of Cleveland, Ohio, in the 30th year of her age.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, November 3, 1886.

THE PRESIDENT, C. H. A. KLEINSCHMIDT, M.D., IN THE CHAIR.

(*Concluded from page 669.*)

DR. P. J. MURPHY read a paper on

THE TREATMENT OF PUERPERAL MASTITIS BY THE EXTERNAL APPLICATION OF SPIRITS OF TURPENTINE.

(See page 683.)

DR. L. ELLIOT said: The report which Dr. Murphy has just read, I have heard with much pleasure and satisfaction, as this method of treatment has been the one I have followed for some years, and, so far as I know, had not been reported previous to the appearance of my paper. We all know the pain and suffering attending these abscesses, and the fear with which women allow their incision. In the treatment of threatened mammary abscess, I have tried the application of ice, belladonna, tight strapping and iodine, as well as the internal administration of calcium sulphide; and have at times prevented suppuration.

About sixteen years ago I saw spirits of turpentine applied to an abscess on the neck, on account of the excessive pain experienced, and, strange to say, after the burning had passed away, the surface became hardened and no further trouble followed. In 1879 and 1880, it was my fortune to meet with several cases of mammary abscess, all of which went to suppuration, one reaching such a state that it more resembled a cancer; free incisions with and without, drainage with horse-hair, ice-bags, supports of all kinds, strapping so tight that the pressure was painful, belladonna and camphorated soap liniment were tried, but with no good result. After this experience, the idea of the spirits of turpentine recurred to me, and in the next case it was tried with the result of seeing all inflammatory symptoms pass away in three days. The manner of its application, which I published in the *Medical Record* for July 31, 1886, is simple, and does not interfere with the employment of other measures.

The breast is bathed well with turpentine, then dried, a piece of soft cotton or flannel wrung out of turpentine is applied and allowed to remain on for a short time, possibly half an hour. This is to be repeated three or four times a day. After each application the breast is to be washed well before nursing the child. It has never been necessary to stop nursing the infant from the affected breast.

I believe if women would pay more attention to the premonitory symptoms of this trouble, seeking advice as soon as they feel a drawing pain upon suckling, and find a hard, tender spot in the breast, abscesses of this structure would be much rarer than they now are. Following this plan of treatment I have had to open but three breasts in forty cases of threatened abscess. No strangury or other unpleasant symptoms have occurred from absorption of turpentine, either in the mother or the child.

DR. S. C. BUSEY said he thought the title of Dr. Murphy's paper slightly misleading, as he does not believe that after pus has formed turpentine would effect a cure so rapidly. After reading Dr. Elliot's paper (in the *Record*, July 3, 1885,) he had determined to use turpentine when occasion offered. On October 24, last he had been called to see a lady who was nursing a ten-months old infant. The lady had had, the night before, a chill, followed by fever and sweating. She was just recovering from a second one when he saw her. Her temperature was 102.5°. She had also had pain in the right breast for several days, and that gland he found swollen, red and very painful. She had attributed this to her corsets. He could not get fluctuation, but his diagnosis was threatened mammary abscess. He ordered quinia and turpentine to the breast. If turpentine irritated it was to be diluted with oil until bearable. The next day the patient had no fever or pain in the breast, and in forty-eight hours she was well. This was a case of mastitis following injury, and was consequently more significant than some of Dr. Murphy's cases. He was, however, certain that no pus was there and that the chills were a coincident affection.

In all his long experience he had never found any method so satisfactory as this, and so far as one case goes he testifies to the efficacy of turpentine as abortifacient of threatening suppurative inflammation.

A year later the lady had a similar attack. Turpentine was used but was not successful in dissipating inflammation. There was, however, no suppuration.

Mammary abscess, however, is a comparatively rare affection. It occurs most frequently in primapara, and usually follows a fissured nipple. He thought that physicians should treat promptly all fissures or abrasions upon the breast, and in this way prevent a possible abscess.

DR. C. E. HAGNER said he had had no experience in mastitis, but he agreed with Dr. Busey in the importance of prophylactic measures against abscess. He thought it important to keep the breast from becoming engorged. It ought to be properly supported as soon as milk appears, and after that kept nearly empty. He did not think it rational or according to our knowledge of pathology to suppose that any drug should be so accommodating as to pass through the skin, reach the lacteal ducts, and abort an inflammation, without getting into the milk in the ducts, as was affirmed. Warmth and moisture to relax engorged vessels were necessary in inflammation. For these, and in addition counter-irritation, turpentine might do. Cold or some hæmostatic, as ergot, might do in first stage of inflammation, but beyond that stage he did not believe abortion possible.

DR. S. C. BUSEY said that he thought Dr. Hagner a little "out" in his ideas of the pathology of mammary abscess. There were three forms. The most common was the superficial, in the subcutaneous tissue; then there was the parenchymatous and the submammary. Turpentine put on the skin does not get beyond the subcutaneous tissue, which is absorptive tissue; hence the parenchyma of the gland is not affected. Dr. Hagner says that an hæmostatic may be of use. Turpentine is an hæmostatic, though he cannot say how it acts. Dr. Hagner also says that he has never used turpentine, but when he has used it as many as thirteen times perhaps he will think better of it. If we exclude drugs whose method of action we are not familiar with, we will have to shorten our list considerably. Thus the method of action of most of the drugs we use externally is unknown.

DR. HAGNER replied that he was not referring in his previous remarks to the submammary and rare forms of abscess, but to the two commoner forms. In the thirteen cases reported by Dr. Murphy it was by no means certain that pus was going to form. Surely no pus was present in any of them so far as he could see. In fact, some were reported cured of mammary abscess before the usual time for abscess to appear under the circumstances. As for the frequency of this affection, in seventeen years of practice he had had but one case of mammary abscess.

DR. T. C. SMITH asked how the irritation and vesication usual with turpentine on a delicate skin was prevented?

DR. P. J. MURPHY replied that at the first symptom of too severe an irritation the drug was removed or the parts smeared with ointment or oil.

GYNÆCOLOGICAL SOCIETY OF BOSTON.

Stated Meeting, October 14, 1886.

THE PRESIDENT, H. O. MARCY, M.D., IN THE CHAIR.
H. J. HARRIMAN, M.D., SECRETARY.

DR. E. W. CUSHING presented a mass of

HYPERTROPHIC RECURRENT GLANDULAR TISSUE REMOVED FROM THE FUNDUS UTERI.

This mass of atheromatous tissue filled a four-ounce measure and was recurrent the fourth time. Dr. Cushing called attention to the practical malignity of such growths.

He also exhibited an

OVARIAN CYST

which was interesting from the fact that it had been diagnosed as a pregnancy by a practitioner of eminence. The tumor was multilocular, and it was with difficulty extracted through a small opening. Dr. Cushing asserted that, in spite of Mr. Lawson Tait's success in operating with an incision of two inches, it was bad surgery to remove a tumor through an opening too small for comfort, and that a large incision, if aseptic, would heal as readily as a small one.

DR. W. SYMINGTON BROWN read a paper entitled

THE RÔLE OF THE OVARY.

The writer criticised the study of pathology to the exclusion of normal physiological processes. Pathological minutiæ were compared to the scaffolding about a house during its erection. It serves a practical purpose, but becomes useless after the completion of the building and must be removed, else it will mar the beauty of the structure. More is to be learned by careful observation of natural processes and guarded deductions therefrom, than from the twisted facts which disease presents. For similar reasons the writer attached but little importance to vivisection as a means of discovery. Experiments on living animals may corroborate or test a great disclosure, but seldom or never find one out. The changes which the ovary undergoes each month may be called the cycles of involution and evolution. When the latter attains its maximum the ovary becomes nearly twice as large as at the close of involution. The ovary is a gland which secretes free cells. It maintains an intimate connection with many other glands—a relationship more marked during pregnancy, but also noticeable during menstruation. Various glandular diseases, such as jaundice, albumenuria, salivation and mastodynia, may all be dependent on or connected with changes in the ovary. The more rapid recovery of robust women than delicate ladies from puerperal diseases is attributed to the greater activity of the glandular system in the former class of patients.

The theories of Dr. Noeggerath, of New York, in regard to the widespread and pernicious influence of latent gonorrhœa upon the tubes and ovaries, producing sterility, were referred to with approval. The fact that prostitutes so seldom conceive is without doubt due to salpingitis and periuterine inflammation arising from gonorrhœa. This sterility is also often

found in virtuous women whose husbands are the subjects of a latent gleet and have communicated it to their wives. The fibrous ovarian sheath becomes thickened; the Fallopian tubes are filled with mucopus, or closed, and it is highly probable that the ova themselves never become developed. If both sides are thus affected, sterility is a foregone conclusion.

The removal of the ovaries for metrorrhagia, salpingitis, long-continued agonizing pain or intractable pelvic disease, was discussed. Dr. Brown maintained that the common objection to these operations, that they unsex the patient, was baseless. Sex is not lodged in either ovary or testicle; if it be in one part more than another it is in the brain. A long series of observations had convinced the writer that insanity in women often depends on sexual disorders, and that such cases can only be cured by local treatment. In severe cases of hystero-epilepsy, Battey's operation is conceded by the most conservative to be justifiable.

Reference was made to a class of cases where sterility follows a sudden arrest of menstruation. Whether this unfortunate event is due to the closure of the fimbriated extremity of the Fallopian tubes by a low-grade inflammation, or to arrest of development of ova due to nervous shock, is uncertain.

In considering the question of cases in which menstruation persists after removal of the uterine appendages, attention was called to the possible existence of a third ovary or of single ovisacs in the human parovarium. Where menstruation persists for some months after such operations, it is probably due to the persistence of the original menstrual impetus. Ovariotomy has proven that the sex of the fœtus does not depend upon the particular ovary which furnishes the germ. The determination of sex probably does not depend upon anything done by either party, but occurs long prior to conception in either the ovary or testicle.

Dr. E. W. Cushing wished to thank Dr. Brown for his excellent paper. He agreed with him in regard to the importance of gonorrhœa as an agent in producing disease of the uterine appendages. These results may follow from an old gleet when for years there has been no discharge at the meatus. In many cases the latent gleet can only be diagnosticated by a microscopical examination of the secretions of the urinary tract. In all cases the *gonococcus* can be found. Dr. Cushing expressed the opinion that nine-tenths of the inflammatory troubles peculiar to women arise from the clap.

Dr. L. F. Warner did not believe that a slight gleet often caused ovaritis, metritis, or many of the other diseases so often attributed to gonorrhœa. He did not believe that Noeggerath's views upon that point had ever been generally accepted by the profession.

STATE MEDICINE.

SANITARY CONVENTION AT BIG RAPIDS, MICHIGAN.

A Sanitary Convention, under the auspices of the Michigan State Board of Health, was held November 18 and 19, 1886. It was opened by an address of welcome by the Mayor of the city, E. W. Hudnutt, Esq. Dr. John Avery, of Greenville, Mich., President of the State Board of Health, spoke in response to the address of welcome, and said that the object of the Convention was not to benefit physicians, but the public. The members of the State Board of Health also wished to gain information, that they may better serve the people.

Dr. John P. Stoddard, of Muskegon, read a paper on

INJURIES OF EVERY-DAY DRUG-TAKING.

He said the habit of taking drugs and nostrums was beyond comprehension. It partly came from mothers dosing babies with soothing syrup, hive syrup, paregoric, worm lozenges, etc. Druggists and proprietary medicine companies distributed flaming bills, chromos and free samples of nostrums from house to house. The prevention was to educate the people in the injurious effects of drugs. There should be less medicine taken, and only on the advice of a physician after a careful diagnosis. A doctor was not capable of prescribing for himself when ill, much less the laity, who knew nothing of the action of drugs.

Dr. David Inglis, of Detroit, read a paper entitled

ALCOHOL: WHAT EFFECT HAS IT AS FOOD, MEDICINE OR POISON?

In closing his remarks on alcohol as a medicine, he said: I should like to produce the continually accumulating evidence of the positive harm caused by such indiscriminate use of all kinds of alcoholic drinks, bitters and tonics. I should like, even more carefully, to define the conditions in which alcohol ought to be used than I have here done. I have only time to urge that we ought, in all cases, to let alcoholic liquors be the last, and not the first, remedy; that we ought to give alcohol in definite and known doses, and only during such time as the drug is required, and to make it our business to see that its use is then suspended, just as we do in case of opium.

Dr. J. L. Burkhart of Big Rapids, read a paper on the *Water-Supply of Big Rapids*, which embodied the report of the committee appointed by the common council to investigate the matter of procuring a better article of water for that city, and contained much of special interest to the citizens of Big Rapids.

Prof. W. N. Ferris, of the Big Rapids Industrial School, read a paper on

HYGIENE OF SCHOOLS.

He said that he could not recall ever having visited a room regularly occupied by forty or fifty pupils, that could be said to be properly ventilated. Dulness, nervousness, headache, colds, catarrh and consumption are among the frequent effects of staying in such rooms. Under the influence of bad air, study is irksome, good behavior difficult, and the play-ground a heaven. He dwelt upon the lack of ventilation in the Big Rapids schools; and said that the foul-air openings could be made several times

larger with slight expense. Strange as it may seem, school patrons think very little about ventilation, and care less. Their sleeping and sitting rooms are without any intentional means of ventilation. Vitiated air is the most expensive commodity which man takes into his body; for in thousands of families the expenditure of money for a single year which sickness and loss of time occasion by inhaling poison would defray the necessary expenses for properly ventilating a decently constructed house. In several of the school-rooms of Big Rapids, the air space for each pupil does not exceed 200 cubic feet. We should construct rooms for lower grades very large, and use single desks. The speaker denounced the style of desks in use in one school-room in Big Rapids as "torture appliances."

JUDGE M. BROWN, of Big Rapids, read a paper on

PUBLIC HEALTH LAWS.

After referring to the health regulations of the ancients, he said: As civilization has advanced, and the average of mankind has reached a higher condition upon the plane of intelligence, health laws have become more general and better enforced. It may be stated as a fact that the race of man has advanced mentally and physically in proportion as heed has been given to the laws for the promotion of health. A kind of intuition seems to pervade the human race, aside from and above all law, that it is necessary to care for the public health in order to be comfortable and happy, and to enjoy this life. This intuition has probably led to the enactment of health laws by persons and bodies having legislative authority. Some offenses against the public health are punishable by the common law—by fine and imprisonment—such as the selling of unwholesome provisions. When articles of food are sold for domestic purposes, the law implies a warranty that they are fit for such purposes. The supreme court of this State says that this rule is not only reasonable, but essential to public safety. He then discussed English sanitary work. He thought the laws of Michigan in regard to public health were good enough, but the way they are usually enforced is very bad. Perhaps one of the greatest sources of sickness in our midst is the want of proper ventilation in buildings occupied as dwellings, public halls and other public places where large assemblages of people convene. In this county, until a very recent date, at every term of the circuit court more or less people in attendance became sick. Court was held in a room entirely unfit for occupancy on account of not being properly ventilated. . . . . I desire to call attention to the subject of prisons and jails in this part of the State. I don't know a jail within the ninth congressional district that is properly ventilated, and hardly one that is proper for a human being to remain in over night. This subject has been agitated and investigated by the State Board of Health and the State Board of Correction and Charities, and a great deal of valuable work has been done; but there is still very much to do.

SURFACE FILTH AS A MEDIUM OF DISEASE

was the subject of a paper by REV. HENRY A. WALES, of Big Rapids. He said: In 1876, Dr. Henry Bowditch, of Boston, made an estimate of the annual cost to the people of the United States because of unnecessary sickness, and placed the figures at $100,000,000. Later, one of our own physicians—who is with us to-day—revised the estimate, going more into detail, and he increased the amount to $300,000,000; a loss each year of over $10,000,000 to the people of Michigan. And this estimate leaves out of view the physical suffering, the mental pain and anguish, and the death of loved ones around our social circles. In regard to filth he said: By surface filth we mean anything of this disgusting nature that is thrown upon or is suffered to lie upon the surface of the ground around our habitations or places of business—garbage, or the refuse of vegetable and animal matter; dirty water of every description, from that in which food is cleansed, to the dish-water and slops of a household; dirt swept from the floors of the home or shop; the contents of the wood-box and spittoons; the refuse of wood-yard, hen-house or pig-pen; and the excrement from chambers and privies. Besides these, there are sources of filth in musty rooms, woolen blankets, feather-beds, and the cellars under the house. Rubbish of any kind always becomes filthy if allowed to stand; and dampness increases filth by causing fermentation and vegetable growth. A close inspection of all the premises of a habitation is continuously needed, that nothing which may cause filth shall be allowed to accumulate. Mr. Wales thought that the "grand march of the giant contagion begins in the surface filth and the vaults of the civilized privy;" and he thought that if the dry earth system was universally introduced, it would exterminate such diseases as cholera, dysentery, and typhoid fever, as they are propagated solely by germs in the voided excrement.

DR. JNO. AVERY, of Greenville, President of the State Board of Health, read a paper on *Pasteur and Protective Medicine.*

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Economy of Cremation—Bequest to Cambridge University—Paraplegia in Pott's Disease—Solution of Tannin for Ingrowing Toe-nail.

Mr. W. Eassie, who is Honorary Secretary of the Cremation Society of England, in a paper on *The Economy of Cremation*, shows that our present system of interment is very costly. At a low estimate the cost of the metropolitan cemeteries was taken at £272,000. Assuming cremation to be practised and to become the mode of disposing of the dead by even 50 per cent. of the population of London, a piece of ground of about 500 acres in extent would be sufficient. It shows, too, that £75,000 would amply cover the expense of the cremating area, and in addition, Mr. Eassie remarked that on

the same basis of calculation some 605 acres of ground would be saved from pollution by the dead. Furthermore, the 500 acres set apart for cremation purposes would serve a population of two and a half millions for 1000 years. The cost of funerals in England and Wales alone in 1874 amounted to £4,871,000. On a fair estimate the cost of cremating 3,100 bodies in 310 working days would only amount to some 10s. 6d. each. The facts and figures introduce in a very plain fashion a question of vast public interest. They involve considerations connected in a more than intimate fashion with the public health, and they afforded food for thought to all who are disposed to discuss a matter, which in its bearings on our physical welfare assumes a high rank. The subject of cremation is, of course, one which it is neither desirable nor possible to force into public prominence. But it is eminently one which demands the quiet and earnest consideration of all thinking people. There are in the question of the proper disposal of the dead many points of sentimental nature, which possess their due influence in modifying opinions, and in raising objections to so-called innovations. The practice of ordinary burial has been so long the way of the tomb, that any departure from this method of disposing of the dead must needs, for a time at least, be regarded with feelings approaching to impatience if not to absolute repugnance.

The most important of all the objections to the present system is the danger to health. Burial grounds, especially around London, tend to become crowded, and the condition of some cemeteries is a crying disgrace to civilization. Coffins piled one on top of the other, and separated by only a few inches of earth, present a spectacle which, while it affords a powerful argument for cremation, must also rudely shock the supporters of the method of ordinary burial. It is a known fact of science that the germs of many infectious diseases are not destroyed by prolonged burial in the earth. Pasteur's experiments on the vitality of the bacilli of splenic fever in cattle have proved this much. Hence, in times of plague and epidemic we only perpetuate by ordinary burial the danger of fresh infection of the living. Add to this the danger of pollution of water supply and of the air itself, and one can readily allow that the advocates of cremation are by no means supporting a foolish project for selfish ends when they advise the incineration of the body in preference to its long and slow decay in the ground.

At the Sanitary Congress at York, the supporters of which are known as "reformed funeral" took part in a discussion on cremation. The leading idea of this reformed method is the quick mingling of human dust with the earth. But it is obvious that one fatal objection remains to all such methods of disposal of the dead. That a body may be resolved sooner or later into its elements in the ground, and that the earth may act as a natural disinfectant, it is absolutely necessary to have a soil of a particular kind. The ground of many cemeteries, so far from disposing readily and quickly of bodies buried therein, actually leads to preserve them. The horrors of clay cemeteries, for example, which are essentially water-logged plats of ground can scarcely be overdrawn, and unless therefore one could invariably pick and choose our burial-grounds, it would appear that the "earth to earth" earth system is put out of court. In many localities it would be impossible to find the necessary kind of soil, therefore cremation alone is left as an unobjectionable means of decently disposing of the dead, with a due regard to the health of the living. Crematoria now exist at Woking which silently and quickly reduce a human body to a condition of dust, such as would take many years to produce under burial even in the most favorable soil. It must also be noted that the real end of burial and of cremation is practically and chemically the same. It is the disintegration of the body into its elements. Burial accomplishes this slowly and often very imperfectly, cremation produces this quickly and without danger to the living. The public is apt to associate the process of cremation with flames and funeral pyres, and the real facts of the case require to be made widely known. Did the public but know that there is no exposure of the dead, no infringement of decency or respect, and no spectacle calculated to hurt the feelings of the mourners, cremation would be more common than at present.

By the will of the late Mr. John Lucas Walker the University of Cambridge receives the munificent bequest of £10,000 "for the promotion without regard to sect or party, of scientific and literary research or of either of these objects, in Cambridge, or in the metropolis or in either of these places." After careful consultation the Vice-Chancellor, Professor Huxley, Sir James Paget and several others, have determined to establish the "John Lucas Walker Studentship," and its administration to be entrusted to the Professor of Pathology in Cambridge University, and a board of management consisting of the Cambridge Regius Professor of Medicine and Professor of Physiology, and the President of the Royal College of Physicians. The income to be applied: 1. To endow a studentship, to be called the "John Lucas Walker Studentship" of the annual value of £200, or such larger sum as the managers may determine, not exceeding £300, tenable for three years, the holder of which shall devote himself to original research in pathology. 2. To further original research in pathology, by additional studentships or exhibitions, prizes or grants at Cambridge or in London. It is stipulated that the studentships, exhibitions, or prizes may be held by and awarded to persons of either sex. It is also expressly set forth that the studentship shall not be awarded as the result of a competitive examination, but the students are to be elected on the nomination of the Professor of Pathology.

At the Harveian Society of London, Dr. Huhlings Jackson remarked on the great length of time during which a patient might remain paraplegic in cases of Pott's disease of the spine and yet recover, sometimes as long as twelve months. He trusted to rest in bed, and put no faith in drugs or applications to the spine, as he had fully made up his mind that they had no beneficial effect upon the spinal cord disease.

At the meeting Dr. Huhlings Jackson showed a boy of 12, recovering from a second attack of paraplegia associated with Pott's disease of the spine. The only treatment had been rest, and he considered the prognosis in such cases was invariably good when complete rest was enforced.

The application of a concentrated solution of tannin to an ingrowing toe-nail is highly spoken of, as it is said if applied with a camel's-hair brush to the soft parts twice a day, to quickly lessen the pain, and after a few dressings it is stated the patient is able to move about with comfort. The strength used is 6 drachms of water and an ounce of tannic acid.

G. O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Phthisical Lung Injected with Iodine—Intubation for Laryngeal Diphtheria.

At the first December meeting of the New York Academy of Medicine, Dr. J. Blake White presented a very interesting specimen of a *Phthisical Lung Injected with Carbolized Iodine.* In his remarks upon it he said that the results which he had met with during the past year the local treatment of diseased lungs had very greatly excited his enthusiasm. Theoretically, intra-pulmonary medication seemed to be a very rational therapeutical method, and practically he had found it to be of much efficacy. He mentioned particularly a case of his in which it was followed by recovery; the progress of the patient being watched with interest by three medical friends. The preparation which he prefers for injections is a mixture of carbolic acid and tincture of iodine, to which a small quantity of morphia and atropia is added. In the cases in which he has employed it all the symptoms have been relieved; the cough being controlled, expectoration diminished, sleep improved, and night sweats checked.

The specimen presented was the left lung of a patient in whose case, although hopeless as regards cure at the time the first injection was made, the effect of the treatment was very marked and gratifying. He was a milkman, 46 years of age, and Dr. White gave a somewhat detailed history of the case. When first seen by him last summer at Charity Hospital, he was in the third stage of phthisis, with a large cavity in the upper part of the left lung, which was in a state of active suppuration. There was profuse expectoration, exhausting night sweats, and all the ordinary symptoms of advanced pulmonary tuberculosis. On the 19th of July the first injection of ten minims of carbolized iodine was made in the first intercostal space. It was followed by no reaction, and there was immediate and marked improvement in the patient's condition. The following week a second injection, of the same character and quantity, was given, and this also, without any reaction whatever, was followed by a great improvement in all the symptoms.

On August 30 a third injection was made; this time twenty-five minims of the carbolized iodine being administered. It was attended by a brief paroxysm of coughing, but no bad results followed, and marked improvement was subsequently noted in the symptoms, as before. Dr. White's term of service at the hospital now expired, and no more injections were made. The patient died October 19, and at the autopsy both the left lung and the pericardium were found involved in the most extensive pleuritic adhesions. In the vicinity of the cavity at the apex of the lung a considerable space was seen to be tinged by the injections. The upper portions, where the injections had been made, presented a marked contrast to the lower portions, where the tissues were in a state of advanced disintegration. During life also the auscultatory signs had indicated a dry condition of the upper parts very different from that met with in the lower. But very little pus was found in the cavity.

The principal paper of the evening, by Dr. Wm. P. Northrup, was on *Laryngeal Diphtheria and its Treatment by Intubation.* Had Bouchut, he said, only been a little more prudent and temperate in controversy with Trousseau in 1858, it would have been France, and not America, which would have had the honor of successfully introducing this now widely accepted method of treatment. As it was, however, the Paris Academy of Medicine announced its deliberate opinion that intubation of the larynx was impracticable, and no more was heard of it for nearly thirty years, when it was revived by a Fellow of the New York Academy of Medicine, Dr. Joseph O'Dwyer, in a manner which soon attracted the attention of the entire profession. All of Bouchut's severe cases, it was true, terminated fatally; but the fact remained that the stenosis had been relieved, and it was also incontestably shown that the larynx would tolerate a tube. These were the data upon which O'Dwyer's successful achievement was based.

Dr. Northrup then proceeded to give the statistics of all the cases of death from laryngeal diphtheria which had occurred among the children of the New York Foundling Asylum during the past five years. He did not make any distinction between croup and diphtheria of the larynx; all the fatal cases of the former being apparently included in the deaths from laryngeal diphtheria. The number of children connected with the institution is about 1800 per annum; of which 1100 are cared for by paid nurses in their own homes, and the remainder accommodated in the asylum buildings. There were 87 deaths in all from this cause; of which 50 were in females and 37 in males; and the greatest mortality was found to be between the ages of three and four years. In 56 the membranes began to form in the larynx before or simultaneously with the exudations in the pharynx. In two cases croup was the first symptom, and death occurred within twenty hours. In 54 cases there was pneumonia, and broncho-pneumonia was very frequently met with. Twenty-seven children died from extension of the membranes into the bronchi, and in 29 the pneumonia was sufficiently severe to cause death alone. In 19 the highest temperature

noted was 104°, in 15, 105°, in three, 106°, in two 103°, and in one, 107°. In all but three of the 87 cases the extent of the membranes was very marked. Interstitial emphysema occurred in eight cases. There were 51 cases of primary diphtheria, and 31 in which the disease was nearly or remotely related to scarlatina or measles.

Dr. Northrup exhibited a set of O'Dwyer's instruments for intubation, and explained the method of introducing and extracting the tube. It was better, he said, to make several short attempts to introduce it than one prolonged effort, on account of the interference with respiration thus caused. The extraction of the tube is more difficult than its introduction, and at the suggestion of Dr. O'Dwyer he recommended that physicians should practice both introduction and extraction upon the cadaver. Those beginning to practice intubation, he continued, were apt to use too small a tube, with the result that it was coughed up. Care should be taken, therefore, always to select the size of tube suitable for the age of the child, as indicated by the scale accompanying each set of instruments. There was, however, no danger of the tube slipping down into the trachea, as some seemed to fear, since the head of the smallest tube could not pass the cricoid cartilage, where the narrowest point of the passage is situated. Neither was there any danger of ulceration of the vocal cords being caused by the tube.

If the condition of the child continued encouraging for forty-eight hours after the insertion of the tube, Dr. Northrup thought that a favorable prognosis might be given; but that it was entirely unsafe to make such a prognosis at any period before the expiration of the forty-eight hours. Not infrequently the greatest possible relief was temporarily secured by intubation in cases which afterwards terminated fatally by the extension of the membranes downwards or by the occurrence of pneumonia. He also spoke a word of caution in regard to withdrawing the tube too soon. Whether it would be advisable to reintroduce the latter in any case would depend on the condition indicated by an examination of the chest. If, on auscultation, the vesicular murmur was normal, there was no cause for uneasiness; but if it was found that the air could not get well into the lungs, especially the posterior portions, it was time to reintroduce the tube. The condition of the pulse also served as a valuable guide to the experienced.

Having mentioned that O'Dwyer's tubes were of good service in stenosis of the larynx in adults, and especially when the condition was due to syphilis, he announced some general conclusions, among which were the following: Intubation relieves dyspnœa due to laryngeal stenosis, and is open to few objections. It is comparatively simple and is also free from danger. No anæsthetic is required, nor is there need of a trained assistant. There is no fresh wound to serve as a new focus for infection. If intubation proves inefficacious, tracheotomy can still be performed. Intubation, however, he said, had one conspicuous fault, viz.: that it embarrasses and sometimes interferes with deglutition. There is also one danger connected with it: the tube might possibly push some of the tenacious membrane down before it, and thus cause a blocking up of the trachea below.

Did it meet the requirements? he asked. The statistics undoubtedly showed that it did. Waxham had had 96 cases, and O'Dwyer 48; and in the 165 cases which had thus far been reported, no less than 28½ per cent. had been saved. It was to be remembered, too, that the method was still new. Valuable experience had been gained, and it could scarcely be doubted that in the future the results would be even more favorable. The statistics of tracheotomy showed no such satisfactory result as this, and Dr. Northrup believed that if all the fatal cases of the operation were reported, the percentage of mortality would be considerably larger than it now appeared.

In the discussion which followed the reading of the paper, Dr. Francis Huber stated that he had practised intubation in eleven cases. The special conditions which led him to resort to it were aphonia, stridulous expiration, and extreme recession of the chest walls, above and below the sternum. He gave a brief sketch of each of his cases, and then said that out of the eleven there had been four recoveries, while one child was still wearing the tube. Five had died, and one other, in which he had just practised intubation, would probably also prove fatal. These results were much better than he had obtained with tracheotomy, which he had performed twelve times, but had succeeded in saving only two out of the twelve children. He stated, also, that in all his cases of iutubation the method was resorted to very late. In conclusion, he exhibited a modification of the O'Dwyer gag devised by his friend, Dr. Denhard, who had also had eleven cases of intubation. Five of them were successful, and all of the eleven, like his own, were late cases.

Dr. A. S. Hunter related two cases, both seen in consultation, in which he had practised intubation. The first was that of a child 6 years of age who had been suffering from membranous croup for two days. The stenosis was extreme, and pulmonary œdema was coming on. He introduced the tube with little difficulty, and the relief was immediate and very marked. After forty-eight hours, however, he saw the patient again, and found the respiration very rapid. It had great difficulty in walking, and he found that by trying it with a considerable quantity of nourishment at a time it did better than if the attempt was made to feed it by the teaspoonful. The pulmonary trouble was now so great that it was evident that the child could live but a few hours longer. He therefore removed the tube, and found that it breathed well without it. Death occurred about seven hours afterward. The second case was in a child 2½ years old with diphtheria, who had a temperature of 103.5°. There was marked stenosis of the larynx, and it was almost completely asphyxiated. The relief afforded by intubation, as in the other case, was prompt and satisfactory. The next day, however, the child coughed up the tube, and it was reintroduced by the attending physician; but death ensued in five or six hours later. Dr. Hunter stated that he had practised intubation five or six times on the cadaver before he attempted it on the living subject.

Dr. Partridge said that Dr. Northrup had mentioned that the only danger from intubation was the possible detachment of portions of membrane which might act as a diaphragm in the trachea below the tube. The same objection held true, however, in regard to tracheotomy; and he referred to a case of this operation in which fatal obstruction occurred in the manner described.

On the evening of December 3, the first meeting of the Section on Public Health, Hygiene and Legal Medicine was held; when Dr. Blaine, of the Willard Asylum at Ovid, N. Y., read a paper on "Bovine Tuberculosis; Its Communication by Inhalation, Ingestion and Hereditary Transmission, and its Dangers to Public Health." P. B. P.

PENETRATING WOUNDS OF THE ABDOMEN.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—I notice by the report of the discussion which followed the reading of Dr. H. H. Smith's paper on "Penetrating Wounds of the Abdomen," read in the Section on Surgery, at the thirty-seventh annual meeting of the Association, as given in your issue of November 27, I am credited with remarks which do not clearly represent my position or views upon the important subject which was presented. Most likely, at the time of the discussion, I was not distinctly heard by the Secretary; or else the necessity to condense prevented him reporting me as fully as I should have desired.

What I did say in substance was this: That although I *had been credited* with the honor of having been the first to open the abdomen to search for perforated gunshot wounds of the intestine, *where there had been no protrusion*, and to apply sutures to the intestinal wounds, yet I was by no means disposed to urge this practice as the best under all circumstances. On this account I would mention my two published cases. The first of these was the one in which the operation was done for artificial anus following a bullet wound received some weeks previously. There had been no intestinal protrusion. I opened the abdomen, freed the wounded intestine from its many adhesions, resected the same, thus restoring the continuity of the gut, by suturing together the freshened surfaces (See *Amer. Jour. of the Med. Sciences*, July, 1867; also 2d vol. "Surgical History of the War").

In the other case, the abdomen was opened for a recent pistol wound of abdomen without protrusion (See *Transactions of South Carolina Medical Association*, 1882; also *Medical News*, May 13, 1882). Here I exposed and sutured five perforations of the small intestines, and two of the mesentery, but failed to discover, as shown by the post-mortem, one additional intestinal wound. I mention this case because of the turn this discussion has taken. It is a fixed idea with many that where there are perforations of the intestines there must be fæcal extravasation. No such extravasation was found at the autopsy, although, as said, I had failed to suture one of the perforations of the gut. And yet there had occurred diffusive peritonitis and death. So, then, the argument that there must be fæcal extravasation, which will lead on to a fatal termination if there be no immediate operation, cannot always be sustained. I am, from my report of these early cases, upon record as an advocate for immediate operation by abdominal section in wounds of the character described; and I still hold to this view, while admitting that those who advocate a different practice have some reason to sustain them.

Dr. Gregory, who has been most earnest in condemnation of the immediate operation, has spoken very wisely and judiciously in some regard. But I cannot accept one of the propositions as announced by him, viz.: that traumatic inflammation is always a limited process. This is not true, and such a doctrine cannot be used as an argument to induce us to remain passive where the intestines have probably been perforated. Traumatic inflammation, as I know to my cost, often extends rapidly. Practically it matters not whether such extension be caused by *sepsis* or not. I remember many years ago, forcing down by the finger in the rectum, a small sessile fibroma of the uterus, and causing it to encroach upon the posterior vaginal wall. Then I cut open the small tumor and twisted it off in a second. My patient died in a few days of diffusive peritonitis. Was not this an extension of a traumatic inflammation? The same result can as readily, or more readily, follow a perforated bullet wound of the intestine. Are we, then, not warranted in trying to prevent such a calamity by an early abdominal section? Respectfully,

R. A. KINLOCH, M.D.

285 Meeting St., Charleston, Dec. 8, 1886.

ABUSE OF MEDICAL CHARITIES.

TO THE EDITOR OF THE JOURNAL:

Dear Sir:—The editorial in THE JOURNAL for November 27 suggests one point in connection with Dispensary service for neglect of which the profession is blamable. The principles inculcated in the Code of Ethics, Sec. 3, Art. 1 ("duties of the profession to the public"), are most praiseworthy, but it would be well to define them by adding "in the absence of provision for that purpose, or in cases of sudden emergency." In every centre of population exists a large body of the impecunious. This comprises first, those whose means are small, or whose employment is irreular and income uncertain; and second, the habitual pauper and the habitual "dead-beat." Honest, legitimate poverty deserves the sympathy and assistance of every right minded man, and in most cases can command it. In this country such a condition is, as a rule, temporary or due to passing causes, and with these unfortunates any regular ethical practitioner can accommodate circumstances to cases without violating the spirit of his fee bill. It is in dealing with the habitual pauper and the habitual dead-beat, that the profession does itself grave injustice, and tends to still further demoralize this class. Practically they only exist in towns containing some thousands of inhabitants, and when resident for any

length of time become well known. Their demands upon the practitioner are arbitrary, arrogant, and unceasing; while the general testimony is that they are more troublesome and unreasonable than good paying patients. It is from their ranks that the unwarrantable but none the less harrassing actions for malpractice arise; and they furnish the majority of the litigants in damage cases against corporations and private individuals of means.

The point I wish to urge is that the profession should in practice be more discriminating; where means of relief have been provided by the local authority, they should unhesitatingly refuse applications for services from these classes, and where attendance has been accidental or involuntary it should be immediately discontinued.

It tends still further to demoralize, where medical men allow bills to be contracted by persons having no means and very rarely any intention of liquidating them.

Indirectly the druggists as a body suffer from similar causes, as their bills for prescriptions compounded are impossible to collect. That a young practitioner will occasionally meet a case which possesses sufficient interest or rarity to repay him, is not to be gainsaid, but the instances are few and far between. On the other hand, the dignity of the profession is lowered, its motives misinterpreted, and good intentions brought into disrepute by this element, which sneers at the eagerness of physicians for business, boasts that it can obtain the services of "any doctor in town," and is ever importunate, ungrateful and vindictive. Yours truly,

JAMES H. PARKINSON, L.R.C.S.,
City Physician, Sacramento, Cal.

NECROLOGY.

JAMES T. MEEK, M.D.

Dr. James T. Meek was born in York Co., S. C., in 1842, and died in Ennis, Texas, November 11, 1886, aged 44 years. He was educated at the Kings Mountain Military Institute, graduating in 1859. He at once began the study of medicine under the direction of Drs. Lindsley and Jackson, of Yorkville, S. C., and attended his first course of lectures in 1859–60 at the South Carolina Medical College. On the breaking out of hostilities between the States, he laid aside his studies and shouldered a musket as a private soldier in the 5th S. C. Regiment (Confederate). The authorities soon found that he could be much more serviceable in the medical department than in the ranks, and he was accordingly transfered to the former. Notwithstanding the fact that he was already relieved from the position of a private soldier, he persisted in retaining his former post during the first battle of Manassas, in which his nerve and undoubted courage won him the approbation of his comrades, both officers and men.

Dr. Meek graduated in medicine at the Virginia Medical College, Richmond, Va., during the session of 1862–3. Soon after his graduation in medicine he passed a most successful examination before the Board of Army and Naval Medical Examiners (C.S.A.), and was at once given the rank of assistant surgeon in the army, and assigned to duty in the Winder Hospital, Richmond, Va., where he soon, by his studious habits, gentlemanly bearing and the successful practice of his profession, won distinction and honor. He continued in the medical service of the Confederacy till the final collapse, filling various positions of trust both in the field and hospital, and laying up precious stores of clinical experience, both in medicine and surgery, upon which he was able to draw in after years with honor to himself, and of untold advantage to his patients and medical friends.

The war being over he located in Johnsville, Bradley Co., Ark., in the summer of 1865, where he at once entered on a large and lucrative practice. His work in this field was immense, and far too trying for his physical strength. After six years of arduous labor at Johnsville (during which he contracted the malady, which finally proved fatal), he moved to Ennis, Texas, where he resided till the time of his death. In this new field, as elsewhere, he soon made many warm friends among the profession as well as the laity, and to the very last was honored with the business and confidence of a numerous and respectable clientèle. He was a man of most noble traits of character, and of sterling worth, firm and decided in his opinions, yet kind and courteous in his intercourse with others, and especially so towards his professional brethren. As a man he loved truth, loved honor, and could be trusted and confided in under all circumstances. As a physician he was conscientious, conservative, able, and his practice both in medicine and surgery was eminently successful. He took a deep interest in medical societies, and was a member at the time of his death of the American Medical Association, the Texas State Medical Association, and the Ellis County Medical Society.

BOOK REVIEWS.

A MANUAL OF MIDWIFERY. By ALFRED LEWIS GALABIN, M.A., M.D., F.R.C.S. (Lond.), Obstetric Physician and Lecturer on Midwifery and the Diseases of Women to Guy's Hospital, etc. Illustrated with 227 wood engravings. 8vo., pp. xxxii–753. Philadelphia: P. Blakiston, Son & Co. 1886. Chicago: W. T. Keener.

The first thing to be noticed in opening this book is that the author has, and wisely some may think, omitted a general description of the anatomy of the female sexual organs, or of the development of the embryo, for the very good reason that students are supposed to be familiar with this subject before beginning the study of midwifery. He has only given so much of the anatomy of the pelvis as has a direct bearing upon the subject of the book. With the exception of some points the teaching of the book agrees with that given by most obstetrical authorities. Among the exceptions may be mentioned the choice

of leg to seize in version for shoulder presentation, the application of a noose to the prolapsed arm, the use of the vectis in protracted labor with an unreduced occipito-posterior position of the vertex, and the use of an oscillatory movement in forceps extraction. In regard to the choice of the leg to be seized in transverse presentations, Dr. Galabin's teaching is practically the same as that given by Lusk, and opposed to that of Simpson, who held that the facility of version depended upon seizing the leg of the *opposite* side of the body to the presenting shoulder. The author's teaching with regard to the application of a noose to the prolapsed arm has also been followed in this country, and in the *American Journal of Obstetrics*, vol. ix, p. 203, may be found the account of an ingenious method which Dr. F. P. Foster employed for making use of the prolapsed arm as an aid to version.

Dr. Galabin uses the vectis in the following manner in occipito-posterior positions: "When labor is arrested or protracted and the occiput fails to rotate forward, rotation may be effected either by a force actually directing the occiput forward, or by one which causes flexion, since it is through defect in flexion that the inclined plane of soft parts fails to turn the occiput forward as usual. Both these indications are fulfilled by the use of the vectis. If the vectis is applied over the occiput and traction made toward the vaginal outlet, as much forward as possible, first, flexion is promoted by the descent of the occiput, and, secondly, the occiput is directly drawn forward, since the vaginal outlet is directed forward in reference to the direction of the pelvic axis at the point where the centre of the head is lying. . . . Even when called in to perform craniotomy, after vigorous efforts to extract with forceps had failed, I have found that the occiput could be turned forward by the vectis with surprising ease, and that then extraction with the forceps presented no difficulty whatever." Without Dr. Galabin's direct statement it would scarcely seem probable that delivery could not be effected with the forceps alone with the complication mentioned; but in other than skilful hands it seems that the vectis is less capable of causing injury to the maternal soft parts, as it is used as a lever, the left hand, pushed up as high as possible, being the point of lever-resistance, and not the pelvic wall.

The gain which can be obtained by oscillatory movements of the forceps, says Dr. Galabin, is due solely to the amount of friction which can be reversed; and this movement is only admissible in those cases in which friction is an important obstacle to advance. And even in these cases he thinks that it is best avoided if direct traction can effect the object sought. "When, however, the head is engaged in the pelvic canal, and impacted in it by friction so that it cannot be readily pushed back in the interval of a pain, and when moderate traction fails to cause any advance of the head, oscillatory movement of the handles may be cautiously tried before recourse is had to craniotomy. The oscillation should be limited in degree, and with each oscillation should be combined firm compression of the handles, so as to make the head one solid mass with the blades, and the maximum of traction which it is thought safe to exert. The oscillation, to be of service, should be in that diameter in which the head is most tightly gripped by the pelvis. Thus, in a flattened pelvis it should be backward and forward, and in a uniformly contracted pelvis it may be in both directions, or the two may be combined in a limited circular movement. . . . The oscillatory movement should not be persevered with long unless the head is found to advance with it, for, if the leverage is successfully called into play, there must be an advance at each oscillation."

There are other points of special interest in this book on which we would gladly touch did space allow. We can only say that one cannot be otherwise than pleased with the work. It is well written; and both author and publishers have reason to congratulate themselves upon its value and appearance.

OUTLINES OF THE PATHOLOGY AND TREATMENT OF SYPHILIS AND ALLIED VENEREAL DISEASES. By HERMANN VON ZEISSL, M.D., Late Professor at the Imperial-Royal University of Vienna. Second Edition, revised by MAXIMILIAN VON ZEISSL, M.D., Privat-docent for Diseases of the Skin and Syphilis, at the Imperial-Royal University of Vienna. Authorized edition. Translated, with Notes, by H. RAPHAEL, M.D., etc., New York, 8vo., pp. xii, 402. New York: D. Appleton & Co. 1886. Chicago: A. C. McClurg & Co.

The most needle-eyed critic, except he be a unicist, can find nothing to carp at in this book, which is a summary of the life-work of one of the, if not the, most eminent syphilographer that ever lived. Added to this, the book has been translated by one who is sufficiently a master of both English and German as to have given us a good translation, singularly free from the round-about expressions too frequently seen in works translated from the German. Those who know anything of the methods of the late Professor von Zeissl need not be told that all his work and investigations were carried out with conscientious scientific exactness and thoroughness, and that while wedded to pathology he was never divorced from good therapeutics. It is rarely, indeed, that one can find a work in which pathology and therapeutics are so happily combined as that neither seems to have been given more consideration than the other. We would more especially recommend the work to some of our dermatological friends (a few of whom reside in England) who have a *penchant* for finding new syphilitic lesions, and for giving them incomprehensible and startling names.

HOW WE TREAT WOUNDS TO-DAY. A Treatise on the Subject of Antiseptic Surgery which can be understood by Beginners. By ROBERT T. MORRIS, M.D., Late House Surgeon to Bellevue Hospital; Consulting Surgeon to the Woman's Hospital of Brooklyn, etc. Second edition, pp. x, 164. New York: G. P. Putnam's Sons. 1886.

The first fault which a reviewer has to find with this book is that it is not indexed: this is a grave

fault in any book, however small it may be. But on careful search one must admit that this is the only fault that can be found in this very complete résumé of the antiseptic treatment of wounds. The author has a style which seems to be all his own, and for a larger and more pretentious work would be thought undignified; but it is a style which impresses facts upon the reader; and after all that is one great factor in making a book useful. No one who reads this book carefully and with understanding can afterwards feel that any of his time was wasted. Dr. Morris not only tells his readers how to dress wounds, and with what, but he tells them where the materials can be bought, how much they will cost, and how they should be prepared. The subject is presented to the readers as though it were something entirely new—and this is just what should have been done.

SURGICAL DISEASES OF THE KIDNEY. By HENRY MORRIS, M.A., M.B., F.R.C.S., Surgeon to and Lecturer on Surgery at the Middlesex Hospital, London. 12mo., 555 pages, with 6 chromo-lithographic plates and 40 engravings. Cloth, $2.25. Philadelphia: Lea Brothers & Co., 1886. Chicago: A. C. McClurg & Co.

Ten or fifteen years ago, before surgeons handled the kidney so freely as at the present day, this book might have been considered a useless addition to surgical literature. But since we have learned so much about these organs, and have found out that there is much more to be learned, such a book, from a surgeon who commands as much respect as does Mr. Henry Morris, cannot be otherwise than favorably received. It is especially to be noted that the work is introduced by a few pages on the regional anatomy of the kidney. The directions for the various operations on the kidneys are given clearly and concisely.

ECONOMY OF COAL IN HOUSE FIRES; or how to convert an ordinary Fire Grate into a slow combustion Stove at a Small Cost. By T. PRIDGIN TEALE, M.A., F.R.C.S., Surgeon to the General Infirmary at Leeds. Illustrated. Pamphlet, cloth, pp. 47, 10 plates.

A DISCOURSE ON THE PRINCIPLES OF DOMESTIC FIREPLACE CONSTRUCTION. By T. PRIDGIN TEALE, delivered at the Royal Institution on February 5, 1886. Pp. 30, bound with above. Leeds: Goodall and Suddick. London: J. & A. Churchill. 1886.

The article on "Economy of Coal in House Fires" is an expansion of a lecture delivered in 1882, and is now "published in the hope that it may contribute to the diminution of the soot and smoke throughout the Kingdom, and so further one great aim of sanitary reformers, the improvement of the atmosphere of towns; that it may effect a large reduction in the amount of cinders and ashes, and so lessen municipal rates; that it may enhance the comfort of the sick room by rendering a fire more free from noise and dust and more lasting; and that it may induce many persons, including the delicate, the invalid, and the hardworked family doctor, to look upon a fire in the bedroom, not as a superfluous extravagance, but as a much needed comfort, nay, as a profitable investment towards the maintenance of health." Surely such objects are worthy of all respect, and in no place should they be more appreciated, outside of England, than in Chicago.

It does not require a very great amount of knowledge or intelligence to follow the plain statements and directions of Mr. Teale in regard to fireplace construction and economy of fuel, and the illlustrations are good enough to enable one to easily understand what is shown. In another department there will soon appear a more general discussion of Mr. Teale's work.

THE SURGICAL DISEASES OF CHILDREN. By EDMUND OWEN, M.B., F.R.C.S., Surgeon to the Hospital for Sick Children, Great Ormond Street, London. 12mo., 585 pages, with 4 chromo-lithographic plates and 85 engravings. Cloth, $2. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

This volume may be called a "complete monograph" in a series of clinical manuals, rather than an attempt at an exhaustive treatise. It is not as its title implies, strictly limited to the surgical affections of children, but this does not render it the less valuable. The whole book is well written, is well indexed, and is a valuable addition to a valuable series of clinical manuals.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH.—The next meeting of the Fifth District Branch will be the third *annual meeting*, to be held in Brooklyn, on Tuesday, May 24, 1887. There will be a morning and an afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes or communications, or by exhibiting specimens. All papers offered

are the property of the Branch, and in future will be published in a current Medical Journal. The Secretary desires to be notified of the title of any paper to be offered as early, as convenient.

E. H. SQUIBB, M.D., *Secretary.*

P. O. Box 94, Brooklyn.

TYPHOID FROM A SINGLE DOSE.—M. Dujardin-Beaumetz has forwarded to the Paris Academy of Sciences a communication on the Pierrefonds typhoid cases last summer. M. Fernet, who occupies a high post at the Ministry of Public Instruction, his wife and family, hired a house at Pierrefonds, a fashionable resort near Compiégne, contiguous to two others. After they had rented it for the season they were told to beware of the water in the well. On this account they drank exclusively mineral water until the last day, when the stock was out, and the servants were too busy preparing to return to Paris to go and fetch some bottles from the chemist. Madame Fernet said, "For once surely there can be no harm in drinking the well-water." They drank it. Six out of the nine persons have since died, including one of the servants. The cook, two of the four children, and Madame Fernet had had typhoid fever before, and though attacked again by it after their return from Pierrefonds, have got through the illness. The well has been examined and is reported to contain the bacilli which are believed to be associated with typhoid fever. This is a common danger to which visitors to so-called health resorts, both on the continent and at home, are frequently subjected. The facility with which well-water is infected is hidden from the population by the impunity with which filthy well-water may often be drunk by resident families who have become acclimatised, especially when that water is for the moment infected only by non-poisonous fæcal matter, and this fancied immunity often leads to habits of carelessness, for which not themselves only, but their visitors have to suffer.—*British Medical Journal*, Nov. 27, 1886.

SANITARY INSPECTORS.—In a paper on this subject, read before the New Jersey State Sanitary Association on Nov. 19, DR. HENRY MITCHELL said: The inspector should so thoroughly know every part of every building in his district; its surroundings, its construction, its lighting, heating, ventilation, water supply and drainage, that he can almost certainly anticipate just how preventable disease may be produced on a given premises. He should be able to tell how it can happen, for instance, that typhoid fever could appear; whether the water supply, the cellar, the door-yard or the drainage is in fault, and whether an adjoining premises has probably caused the mischief; and whether the case was probably imported from another locality. He should know the vital statistics of every dwelling, and be thus aided in judging of the probability of the existence about a premises of some unknown source of danger to health. He should know the condition of every vacant lot, street, and public place in his district.

All of this valuable information should be carefully and regularly recorded and classified, so that it may be available for daily study. Is it probable that these various facts can be carried in memory in a clear and useful form? And if death or removal from office deprives a locality of its inspector, shall the accumulated information which years, perhaps, may have been expended in gathering, be lost? Such a sanitary history should be on the files of every local board of health, and its story should be familiar to every member of such a board. Such a record is worthy of the greatest care in its preparation. Entries should be made with ink, and nothing vague or indefinite should mar its pages.—*Sanitary News*, Dec. 11, 1886.

WOMAN'S MEDICAL COLLEGE OF CINCINNATI.—The first Session will begin on February 16, 1887, with full Faculty and ample facilities. The Dean is Dr. D. D. Bramble, 165 Broadway, Cincinnati.

OHIO STATE SANITARY ASSOCIATION.—The fourth annual meeting of this Association will be held at Columbus, O., on the second Thursday and Friday of February, 1887.

DR. R. HARVEY REED, of Mansfield, O., recently gave "A Sanitary Talk for the Farmer" before a farmer's institute held in Mansfield. Such meetings afford excellent opportunity for the sanitarian to sow sanitary seed, and the *Sanitary News* suggests that State Boards of Health coöperate with agricultural boards so as to be heard at the regular meetings.

DR. OWEN T. HUNT, of La Crosse, Ark., died on September 22, from the effects of a gunshot wound. He was born in Tennessee in 1833, and was graduated from the University of Pennsylvania in 1854.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 4, 1886, TO DECEMBER 10, 1886.

Major A. A. Woodhull, Surgeon, ordered for duty at post of Ft. Leavenworth, Kans. S. O. 138, Dept. Mo., Dec. 3, 1886.

Capt. F. C. Ainsworth, Asst. Surgeon, will repair to this city and report in person to the Secretary of War, and on completion of the duty which may be required of him will return to his station (New York City). S. O. 280, A. G. O., Dec. 3, 1886.

Capt. Fred. C. Ainsworth, Asst. Surgeon, relieved from duty as Recorder of the Army Medical Examining Board, New York City, and ordered to report in person to the Surgeon-General of the Army for duty in his office. S. O. 282, A. G. O., Dec. 6, 1886.

Capt. P. R. Brown, Asst. Surgeon, leave of absence for seven days, granted by Post Order, is extended twenty-three days. S. O. 124, Dept. Ariz., Nov. 24, 1886.

Capt. H. S. Turrill, Asst. Surgeon, ordered for duty as Post Surgeon, Ft. Spokane, W. T. S. O. 207, Dept. Columbia, Nov. 29, 1886.

Capt. Edward C. Carter, Asst. Surgeon, leave of absence extended six months. S. O. 281, A. G. O., Dec. 4, 1886.

First Lieut. Paul Clendenin, Asst. Surgeon, assigned to duty at Ft. Davis, Tex. S. O. 166, Dept. Texas, Nov. 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING DECEMBER 11, 1886.

Percy, H. T., P. A. Surgeon, U. S. N., ordered to Naval Academy, Annapolis, Md.

Norfleet, Ernest, P. A. Surgeon, U. S. N., granted sick leave for three months.

THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. VII. CHICAGO, DECEMBER 25, 1886. No. 26.

ORIGINAL LECTURES.

VITILIGO.

A Clinical Lecture Delivered at the College of Physicians and Surgeons of Chicago.

BY HENRY J. REYNOLDS, M.D.,

PROFESSOR OF DERMATOLOGY IN THE COLLEGE; PROFESSOR OF SKIN AND GENITO-URINARY DISEASES, CHICAGO POLICLINIC; CHIEF DERMATOLOGIST TO THE WEST SIDE FREE DISPENSARY; SURGEON TO THE GENITO-URINARY DEPARTMENT WEST SIDE FREE DISPENSARY, ETC.

(*Reported by* WILLIAM WHITFORD.)

In the class of skin diseases known as "atrophies" we have a subdivision in which the atrophy or disease is entirely confined to the pigment or coloring matter of the skin. We meet with this condition at times as a congenital affection, when it is called *albinismus*. When it is acquired during the life of the individual it is called vitiligo. The congenital condition, or albinismus, is generally universal, of which the so-called albino is an example. The acquired form, or vitiligo, is always only partial.

While neither of these conditions is of great interest, therapeutically considered, as they are not, as a rule, very amenable to treatment, they are nevertheless, on account of their comparative rarity and the very striking deformity they produce, not only matters of great importance to those so afflicted, but of considerable interest to physicians. I therefore take great pleasure in introducing to your notice to-day a very well-marked case of the acquired form of the disease, or that known as vitiligo, or acquired leucoderma. This case is also interesting, inasmuch as it tends to show the hereditary tendency of the disease.

Let me first, however, briefly enumerate some of the more important characteristics of the disease. Though the case before us is a colored boy, the disease may occur in any race or age, and either sex. The disease first manifests itself as one or more small, white, non-pigmented spots, which may be of any shape, but are usually roundish at the onset. These patches are generally well-defined; in other words, the white color does not fade away gradually into the surrounding healthy skin, but terminates abruptly. The advance of the disease is by peripheral extension of the patches already formed, and by the development and spread of new non pigmented spots. The surface of the diseased patch is always smooth and soft, there being nothing to indicate an involvement of any of the skin structures other than the pigment or coloring matter; therefore the only form of lesion is the maculation. The secreting function of the sebaceous and sudoriparous glands is to all appearances unimpaired. It would be interesting, however, to know, in this connection, whether the natural, physiological odor of the part characteristic of the negro race was changed or not, as it would tend somewhat to show its source; but as the only scientific means at our disposal for making an estimate of this kind is the olfactory apparatus of the investigator, it is difficult, even in the more generalized form of the affection, or even in the universal form of albinism, to state even approximately in this regard. The subjective sensation of the part is usually normal. The integument immediately surrounding the non-pigmented patches is frequently darker than normal, owing to a deposit there of an excessive amount of pigmentary matter. The hairs of the patch so affected are usually likewise destitute of pigment, and therefore white in color, though this is not universally the case. The disease, though sometimes very slow in its progress and extremely chronic, may eventually spread so as to cover very large areas. At certain times the disease seems to be more marked than at others, a fact which may be explained by the tanning, or bleaching of the surrounding integument incident to the change of the seasons or the occupation of the individual. The disease most commonly manifests itself on the backs of the hands, the neck, face, head, etc. There is no appreciable constitutional disturbance. It has by some been regarded as a form of leprosy, but it is not, as we shall see when we come to the question of diagnosis.

Case.—The history of the case is as follows: John Anderson, æt. 12, colored. Parents both colored, but mother has been afflicted since childhood with the same disease, and in a manner very similar to the case before you. He has eleven brothers and sisters, five of whom are marked like himself, one has only a white patch, involving both integument and hair, on the top of the head. The other five are all black and free from the disease. The disease commenced in all in early childhood. It soon reached its present state of development, and has not for years advanced any. You will first notice the white patch of hair extending from the forehead to the vertex. You will notice in this case that the disease is rather generally disposed, involving the arms, legs, body, face, hands, etc., in white patches of all sizes and shapes, from one to eight or ten inches in diameter. You will notice, also, that the skin to all appearances is

perfectly normal, apart from the lack of pigmentation, being smooth and free from other lesions of any kind; and that the subjective sensation of the parts is unaffected, as also the secreting function. In some places you will find an increased pigmentation of the surrounding integument, while in others it fades away more gradually. It is evident from its long existence and unchanging character that it is a very chronic, if not incurable disease. You see further that there is no evidence of any constitutional derangement, as he is a picture of physical vigor.

Etiology and Pathology.—The achromia is of course due to a lack of pigment in the rete mucosum of the affected part; and the darker color, sometimes observed surrounding the white patches, to an increased deposit of the same material; but what causes the deficiency or unequal distribution of the coloring matter, is at present practically unknown. Certain conditions, however, while they cannot be regarded as etiological factors, may be mentioned in this connection as having a certain etiological bearing. I refer to the age, race and sex. It usually makes its appearance in early and middle life, is more common in the negro, and is more frequently met with in males than females. Tilbury Fox thinks the sun's rays have a certain influence upon it. It is probable, however, that the disease results directly from a disturbance of the function of the nerves which preside over the nutrition of the part. This seems the more probable, inasmuch as the disease seems at times to follow the cutaneous distribution of certain nerves, and that the sensation of the affected part is, according to some observers, said also to be at times affected, but the causes which give rise to this perverted nerve function must with our present knowledge of the disease be, at best, only conjectural.

Diagnosis.—The diseases which most resemble vitiligo are partial congenital leucoderma, morphœa, tinea versicolor, chloasma and leprosy. In so pronounced a case as the one before us, however, it would be impossible, with even the slightest knowledge of the subject, to err in the diagnosis. In the diagnosis, for instance, in the white subject, and where the spots are not so numerous and the contrast not so great, more care may be required. The chief point of distinction between partial congenital leucoderma or partial albinism and vitiligo is that the former is acquired previous to birth, and remains permanently the same through life, while vitiligo is always acquired after birth, and is usually not stationary but progressive. Besides, we do not have the hyperpigmentation of the skin surrounding the patches in partial albinism which is frequently seen in vitiligo, but rather the reverse.

From morphœa the disease may readily be distinguished by the entire absence of any thickening or structural change of the derma, which is characteristic of morphœa. The margin is not so well defined in morphœa. In morphœa of any duration the secretory functions are impaired, owing to the structural changes. The tendency to spontaneous recovery is greater in morphœa.

In the white subject it might be necessary to differentiate between this disease and tinea versicolor. It is only necessary, however, to determine which is the healthy and which is the diseased skin in order to settle this point, as the darkened skin is the diseased portion in tinea versicolor, whereas in vitiligo the darker skin is the normal skin. But this is not always so easy to determine in examining only a certain area. Tinea versicolor, however, is always found on the chest and trunk, and never extends up on the neck nor to the arms and hands, which are the favorite localities for vitiligo. We have the furfuraceous desquamation and the discovery of parasite with the microscope in tinea versicolor, which we do not have in vitiligo. This young lady, 16 years of age, represents a well-marked case of tinea versicolor, and as she passes around amongst you you will please notice the contrast.

In chloasma we have only the hyper-pigmentation or darkening of the skin without any absence of pigment in patches. It is usually due to constitutional derangement or cachexia, while there is not necessarily any systemic impairment in vitiligo.

Lepra is a constitutional disease. We usually have structural changes in the derma, the sensation of the part is affected, it tends to fatal results, etc., all of which is the reverse of what is characteristic of vitiligo.

Treatment.—While vitiligo may usually be regarded as not amenable to treatment, we are nevertheless, at times, called upon to endeavor to relieve the deformity it produces. Various remedies have been recommended as constitutional measures. Among these may be mentioned nutritious diet, iron, mineral acids, nerve tonics, arsenic, phosphorus, nux vomica, the hypodermic injection of pilocarpine, etc. Locally, the use of cantharides, or mustard, applied to the patch, will sometimes produce at least temporary pigmentation. While, however, it is often difficult to produce pigmentation of the white patch, we are always able to diminish the pigmentation of the surrounding skin, and may thus greatly relieve the conspicuousness of the disease. For this purpose liq. potassæ, ammonia, acetic acid, bichloride of mercury, etc., may be applied in various strengths and combinations, as suggested in the treatment for chloasma.

ORIGINAL ARTICLES.

STRICTURE OF THE URETHRA; URETHRAL CALCULI; INTERNAL AND EXTERNAL URETHROTOMY; DEATH FROM PYELITIS.

BY S. T. ARMSTRONG, M.D., PH.D.,
PASSED ASSISTANT SURGEON U. S. MARINE HOSPITAL SERVICE.

Isaac Jackson, a negro, aged 30 (?), native of Mississippi, a laborer by occupation, was admitted to the City Hospital, Memphis, Tenn., on the evening of August 25, 1886, for inability to pass his urine. An attempt was made by the Interne, Dr. John Fricke, to introduce a catheter, but a stricture near the meatus prevented the passage of the instrument. As there was a constant dribbling of urine from the

urethra, thus partially relieving the over-distended bladder, no further operative interference was attempted that night.

As I was temporarily acting for the surgeon in charge of the hospital, the case came under my observation on August 26. The patient was a tall, muscular negro; his face wore an anxious expression; but slight febrile movement; the bladder was over-distended, reaching to within four centimetres of the umbilicus, and was distinctly noticeable as a large globular tumor beneath the abdominal parietes. The penis was of ordinary length; the prepuce, as is usually the case in negro men, was elongated; but the preputial meatus was so narrow that it was with great difficulty retracted, and when behind the corona it so effectually compressed the urethra that it was impossible to pass in an instrument.

The patient stated that the prepuce had been retracted with great difficulty all his life. He had gonorrhœa first when he was 21 years old, but since that age he had been rarely free from a gleety discharge. He has had within recent years some difficulty in passing his urine; and within the past six months this difficulty has markedly increased.

A No. 6 French *bougie à boule* was the largest instrument that could be introduced into the urethra; this detected three strictures within ten centimetres of the meatus, and the point of the bougie was stopped at that distance by a smaller contraction of the urethra. A Maisonneuve urethrotome was introduced, and the strictures incised, but the free passage of the instrument was prevented by some foreign body in the membranous urethra. These were supposed to be calculi, but no attempt was made to seize them, as no suitable forceps were at hand. The urethrotomy was made without an anæsthetic, some difficulty being experienced in manipulating the instrument on account of the prepuce. There was free hæmorrhage from the urethra, and the operation seemed to allow a free flow of urine. He was given sulphate of quinine and morphine, and further operative interference deferred until the following morning.

The patient passed a comfortable night, and on the morning of August 27 he was anæsthetized by chloroform, and first circumcised. Suitable forceps were introduced into the urethra, but the calculi could not be removed. The hair was shaved from the perineum and pubes, the entire region washed out with bichloride of mercury solution, and dissection of the perineum made to the urethra; the calculi were seized with dressing forceps, and two removed. A sound was passed from the meatus to the bladder, but no vesicle calculi were detected. Following the withdrawal of the sound, a quantity of purulent urine escaped through the perineal wound. The wound and the urethra were washed out with a warm bichloride solution, and iodoform dusted about the parts.

The patient reacted well after the operation, felt very comfortable, and was ordered five grains of quinine and ten drops of the tincture of the chloride of iron every three hhurs.

August 28 he felt better, the bladder comfortable; the urethra was washed out with a warm solution of boracic acid. This treatment was continued daily, the Interne reporting no rise of temperature in the evening. But the patient was growing weaker, and died on the afternoon of September 1.

The necropsy was made seventeen hours post-mortem; rigor mortis. The brain was normal. The right lung was adherent by old pleuritic adhesions, otherwise normal; the left lung was adherent to the diaphragm, otherwise normal. The heart was normal. The liver was slightly enlarged. The spleen was light colored. Both kidneys were enlarged; suppurative inflammation of the pelvis and glandular substance; the ureters were dilated, being about five centimetres in diameter. The bladder contained urine and some blood coagulum. The prostate gland was normal, but just across the external boundary of the prostatic urethra was a thin band. The urethral and perineal wounds appeared healthy, and union had progressed well at the site of the circumcision. Death was caused by the pyelitis.

The calculi removed weighed 1.7 grains; they were phosphatic, and contained no nuclei.

This case is an admirable illustration of the advisability of removing a long tight prepuce, though by no means an argument for promiscuous circumcision. Had the prepuce been removed when the man was younger, he would have been less liable to the gonorrhæa, and if acquired, that disease would probably have followed its usually mild course in his race, thus escaping the stricture. Upon the latter, without doubt, depended the calculous formations, caused by deposit from the retained secretions. Their interference with the free evacuation of the bladder caused first cystic distension, then distension of the ureters and renal pelves, with the consequent inflammation.

MEDICAL PROGRESS.

THE TREATMENT OF PUERPERAL SEPSIS.—RUNGE, of Dorpat, states that his late experience in the treatment of puerperal sepsis has taught him a manner of dealing with the affection that yields far better results than other methods. A strict *local* therapeusis is carried out. Rigid antisepsis of hands and instruments in conducting the labor is the best prophylactic. The vulva is cleansed at the beginning of labor, but no vaginal irrigation is used before, during or after a normal labor, and in such uterine irrigation is held to be a *lapsus artis*. Lacerations are sutured if large, or dusted with iodoform if small. When fever sets in the cause is sought for, and if found in the genital apparatus he uses vaginal irrigations—temporary are preferred to permanent—and in cases of offensive lochia, uterine irrigation with a five per cent. carbolic acid solution. The latter is repeated once or twice, and during its use the vagina is protected by a stream of water. Further absorption of septic matter is in this way prevented. The object of general treatment is to raise and maintain the power of resistance of the system to enable it to

throw off the poison absorbed. To accomplish this purpose the most important vital functions of the organism must be maintained and regulated. These are sleep and digestion; and while these are preserved the system cannot yeld to the disease.

All measures that impair the ability to take food must be considered objectionable in puerperal sepsis. Experience shows that the resisting powers of the organism are best maintained when *alcohol in large doses* is combined with *tepid baths*. The first results observable under their use are ability to take plenty of nourishment and the setting in of sound sleep, especially in restless patients. Alcohol is exhibited in the form of Stokes's mixture: ℞. Cognac, aqua distil., aa 60.0; vitellus ovi unius, syr. simpl., 25.0, of which one to two tablespoonfuls are given every hour, and between these doses, one to three tablespoonfuls of some strong wine. This is continued day and night until sound sleep ensues. To show the quantities taken he cites the instance of two patients, one of whom took during the first twelve days twelve bottles of port wine and 1200 grams of cognac, and the other, from the second to the ninth day, ten and one-half bottles of port or Madeira, and two liters of cognac. But alcohol alone does not bring on a desire for food. This is accomplished by the simultaneous use of tepid baths. Refusal of food, increased somnolency, a frequent and weak pulse, a high and equal temperature, restlessness and delirium, are indications for a bath. Collapse, also imminent collapse as indicated by unequal temperaature and a flickering pulse, contraindicate a bath, while metastasis to the lungs and femoral thrombosis indicate great care in their use. The temperature of the bath should be 81° to 85° F., and in case of great somnolency one or two cold douches should be applied. It should not be extended beyond five to ten minutes, and at times a simple immersion is all that is admissible. He rarely begins with the baths before the third day, and gives one, two and three baths a day. Under this treatment patients readily take food, and milk, eggs, meat broths and meat, the latter finely cut or scraped, is freely given, and taken with relish. Castor oil is at first used to relieve constipation if present, and later on enemata are employed. Severe pain demands opium and ice to the hypogastrium, the ice being replaced by hydropathic compresses as the pain becomes less severe.

After defervescence is complete the patient is for a long time kept on large doses of ergot. The general should be begun conjointly with the local treatment. In the lymphatic form of puerperal sepsis, characterized by tympanitis, no great pain, frequent and feeble pulse, singultus, rare or absent vomiting, the puerperal peritonitis of authors, this line of treatment yields admirable results. It remains powerless in the form simulating perforative peritonitis or septic peritonitis after laparotomy, in which intense pain, enormous tympanitis, and incessant vomiting are pronounced symptoms.

Runge compares the present line of treatment with that of former years. The local treatment was what it is now, except that at one time voluminous irrigations were used for prophylactic purposes, but again quickly abandoned when it became apparent that the mortality rate was increased. The general treatment consisted then, as now, of alcohol, but it was given in small, inefficient doses, and only when grave symptoms arose. Large doses of quinia were given under the sway of Liebermeister's views, for the purpose of reducing temperature. They did not at all influence the course of the disease. Thanks to the labor of Fränzel, Unverricht, and Naunyn, the views as to the injuriousness of fever have been set aside. But quinia, salicylic acid and the other antipyretics do not now exert as good influences on the course of the disease, but are positively injurious in puerperal sepsis by impairing and destroying the desire for food, and by covering up the real condition of the patient by their physiological symptoms when given in massive doses. The favorable influence on the heart's action and on the respiration, the action on the sensorium, the effect of maintaining and stimulating the desire for food, make the line of treatment now followed out stand out brightly before all others.—*Volkmann's Sammlung*, No. 287.

THE DIURETIC ACTION OF MERCURY.—In the *Practitioner*, September, 1886, an article is contributed by SPILLER LOCKE on the diuretic action of mercury. It has long been known that the action of digitalis and squills as diuretics is greatly assisted by the addition of a little mercury, and lately calomel alone has been lauded as a diuretic. The clue as to the diuretic action of mercury seems to be explained by the connection between bile-secretion and the formation of urea, lately demonstrated by Noël-Paton. This observer has noticed that uniformly a direct relation can be traced between the activity of a drug as a hepatic stimulant, and its activity in causing an increased formation and excretion of the most important nitrogenous waste-products. The administration of mercury to a dog in a state of nitrogenous equilibrium causes a marked increase in the amounts of urea, uric acid, and water excreted. Drugs which cause an increased formation of bile also cause an increased formation of urea; this fact gives new ground for the belief that the liver is the great seat for the formation of urea. Mercuric salts cause a greatly increased secretion of bile, as well as of urea, besides causing a destruction of red blood-corpuscles, according to Noël-Paton. It is well known that an increased quantity of urea in the blood acts as a powerful diuretic, and the good effects derived from the use of mercury in combination with digitalis and squills are readily explained by its action on some metabolic process—one outcome of which is the secretion of bile, and another the formation of urea. Rutherford has shown that calomel does not cause increased secretion of bile, and that mercuric salts only had a diuretic action; consequently in those cases in which calomel has produced diuresis, there must either have been some trace of the per-salt present, or the calomel has been transformed in the alimentary canal into the per-salt.—*London Medical Record*, Nov. 15, 1886.

THE

Journal of the American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, DECEMBER 25, 1886.

VITAL STATISTICS.

The value of correct records of the births and deaths in each town, county and State, for various purposes, is too generally known to require comment. Such vital statistics are as important to the medical profession in prosecuting inquiries concerning the causes, prevalence and results of disease, as they are to the sanitarian and the political and social economist in devising means for preventing disease, lessening poverty and increasing the duration of human life. And yet, their value for any of these purposes depends almost entirely upon their actual correctness. Many of the States have laws designed to ensure actually reliable returns of the births and deaths for their entire population, but in only a few have these laws been executed with such efficiency as to make the results of much value. This is illustrated by the annual reports of many of the State Boards of Health, and we have just been forcibly reminded of the same by a circular letter from the Secretary of the Illinois State Board of Health, containing the sections of the laws of the State relating to the returns of births and deaths and the penalties for neglecting the same, copies of which have been or will be sent to all the registered physicians and midwives in the State, accompanied by official notice that the law must be complied with from the first of January, 1887, or the penalties will be enforced.

A glance at the statistical tables in the recent annual report of the State Board shows that, although the law requiring all physicians and midwives to make returns to the designated officers of all births and deaths occurring under their care within thirty days, have been in existence since 1877, not an average of one-half of either have been returned in any part of the State except the city of Chicago. Here, the additional municipal law requiring the certificate showing the causes of death before permission can be obtained for burial, has resulted in a gratifying degree of correctness of the statistics of mortality. But even here not more than two-thirds of the births have been reported. We hope the physicians throughout the State will yield a cordial coöperation with the renewed efforts of the State Board of Health, to make the *vital statistics* of the State hereafter worthy of credit, and capable of subserving the important interests in advancing medical and sanitary science, as well as aiding in the solution of the important problems of social and political economy, for which they are designed.

CLOSE OF VOLUME VII.

The present number of THE JOURNAL closes the seventh volume, and contains a full index and title-page ready for binding. The beginning of the eighth volume the first week of January is a good time for new subscribers to commence taking THE JOURNAL. The fact that it contains all the papers read in the several Sections of the American Medical Association, many of the more important ones presented in the State Societies, and many valuable original contributions, enables it to give its readers pretty full information concerning all departments of the profession. This is rendered still more complete by regular reports of the most important Medical Societies of Boston, New York, Philadelphia, Washington and Chicago. The general circulation of THE JOURNAL in every part of the country makes it a desirable medium for medical writers and investigators to communicate with the profession, and we are having constantly a surplus of interesting matter on hand. If the friends of our State and National medical organizations would interest themselves sufficiently to give us a few hundred new subscribers we could enlarge THE JOURNAL by adding to its number of pages of reading matter, and increase the corps of assistants and correspondents to a very gratifying degree.

THE NATIONAL CODE OF MEDICAL ETHICS.—We republish in the present number of THE JOURNAL, the Constitution and By-Laws of the American Medical Association and the Code of Ethics, with the explanatory resolutions adopted at the annual meeting of the Association in 1885. The constant addition of new members to the Association makes it desirable that the Permanent Secretary should have a supply of these documents in convenient form for distribution. We shall therefore print an extra edition in cheap reprint form for general use.

PLAN OF ORGANIZATION FOR A NATIONAL MEDICAL ASSOCIATION.

Whereas, The Medical Convention, held in the city of New York, in May, 1846, have declared it expedient "for the medical profession of the United States to institute a National Medical Association;" and,

Inasmuch as an institution so conducted as to give frequent, united and emphatic expression to the views and aims of the medical profession in this country, must at all times have a beneficial influence, and supply more efficient means than have hitherto been available here for cultivating and advancing medical knowledge; for elevating the standard of medical education; for promoting the usefulness, honor and interests of the medical profession; for enlightening and directing public opinion in regard to the duties, responsibilities, and requirements of medical men; for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it: therefore,

Be it resolved, In behalf of the medical profession of the United States, that the members of the Medical Convention held in Philadelphia in May, 1847, and all others who, in pursuit of the objects above mentioned, are to unite with or succeed them, constitute a National Medical Association; and that for the organization and management of the same, they adopt the following *Regulations*:—

I.—TITLE OF THE ASSOCIATION.

This institution shall be known and distinguished by the name and title of "The American Medical Association."

II.—MEMBERS.

The members of this institution shall collectively represent and have cognizance of the common interests of the medical profession in every part of the United States; and shall hold their appointment to membership either as delegates from local institutions, as members by invitation, as permanent members, or members by application.

The *Delegates* shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Sodieties as are recognized by representation in their respective State Societies, and from the Medical Department of the Army and Navy of the United States, and the Marine Hospital Service of the United States.

Each delegate shall hold his appointment for one year, and until another is appointed to succeed him, and shall participate in all the business and affairs of the Association.

Each State, County and District Medical Society, entitled to representation, shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *Provided*, however, that the number of delegates from any particular State, Territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of this Association. The Medical Staffs of the Army and Navy shall be entitled to four delegates each. The Marine Hospital Service of the United States shall be entitled to one delegate.

No individual who shall be under sentence of expulsion or suspension from any State or local medical society of which he may have been a member, or whose name shall have been, for non-payment of dues, dropped from the rolls of the same, shall be received as a delegate to this Association, or be allowed any of the privileges of a member, until he shall have been relieved from the said sentence or disability by such State or local society, or shall have paid up all arrears of membership; nor shall any person not a member and supporter of a local medical society, where such a one exists, be eligible to membership in the American Medical Association.

No one expelled from this Association shall at any time thereafter be received as a delegate or member, unless by a three-fourths vote of the members present at the meeting to which he is sent, or at which he is proposed.

Members by Invitation shall consist of practitioners of reputable standing from sections of the United States not otherwise represented at the meeting. They shall receive their appointment by invitation of the meeting, after an introduction from, and being vouched for by, at least three of the members present, or three of the absent permanent members. They shall hold their connection with the Association until the close of the annual session at which they are received; and shall be entitled to participate in all its affairs, as in the case of delegates, except the right to vote.

The *Permanent Members* shall consist of all those who have served in the capacity of delegates, and of such other members as may receive the appointment by unanimous vote, and shall continue such so long as they remain in good standing in the body from which they were sent as delegates, and comply with the requirements of the By-laws of the Association. Permanent members shall at all times be entitled to attend the meetings, and participate in the affairs of the Association, so long as they shall continue to conform to its regulations, but without the right of voting; and, when not in attendance, they shall be authorised to grant letters of introduction to reputable practitioners of medicine residing in their vicinity, who may wish to participate in the business of the meeting, as provided for members by invitation.

Members by Application shall consist of such members of State or county societies, certified to be in good standing by the president and secretary of said societies, as shall make application for admission. They shall simply have the right to receive THE JOURNAL on the same terms as other members.

Every member elect, prior to the permanent organization of the annual meeting, or before voting on any question after the meeting has been organized, must exhibit his credentials to the proper committee,

and sign these regulations, inscribing his name and address in full, specifying in what capacity he attends, and, if a delegate, the title of the institution from which he has received his appointment.

III.—MEETINGS.

The regular meetings of the Association shall be held annually. The place of meeting shall be determined, with the time of meeting for each next successive year, by vote of the Association.

IV.—OFFICERS.

The officers of the Association shall be a President, four Vice-Presidents, one Permanent and one Assistant Secretary, a Treasurer, and Librarian. They shall be nominated by a special committee of one member from each State represented at the meeting, and shall be elected by vote on a general ticket.

Each officer, except the Permanent Secretary, shall hold his appointment for one year, and until another is elected to succeed him. The Permanent Secretary shall hold his appointment until removed by death, resignation, or a vote of two-thirds of the members present at a regular annual meeting.

The Presidents and Vice-Presidents shall assume the functions of their respective offices at the beginning of the annual meeting next succeeding their election; all other officers shall enter upon their duties immediately after their election.

The President shall preside at the meetings, preserve order and decorum in debate, give a casting vote when necessary, and perform all the other duties that custom and parliamentary usage may require.

The Vice-Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence, or at the request of the President, one of them shall officiate in his place.

The Permanent Secretary shall record the minutes and authenticate the proceedings; give due notice of the time and place of each next ensuing annual meeting; notify all members of committees of their appointment, and of the duties assigned to them; hold correspondence with other permanently organized medical societies, both domestic and foreign; serve as a member of the Committee of Publication; and carefully preserve the archives and unpublished transactions of the Association.

The Assistant Secretary shall aid the Permanent Secretary in recording and authenticating the proceedings of the Association; serve as a member of the Committee of Arrangements, and perform all the duties of Permanent Secretary temporarily whenever that office shall be vacant, either by death, resignation, or removal.

The Treasurer shall have the immediate charge and management of the funds and property of the Association. He shall be a member of the Committee of Publication, to which committee he shall give bonds for the safe keeping and proper use and disposal of his trust. And through the same committee he shall present his accounts, duly authenticated, at every regular meeting.

The Librarian shall receive and preserve all the property in books, pamphlets, journals, and manuscripts presented to or acquired by the Association, record their titles in a book prepared for the purpose, acknowledge the receipt of the same, and he shall be a member of the Committee of Publication.

V.—STANDING COMMITTEES.

The following standing committees, each composed of seven members, shall be organized at every annual meeting, for preparing, arranging and expediting business for each next ensuing year, and for carrying into effect the orders of the Association not otherwise assigned, namely, a Committee of Arrangements and a Committee of Publication.

The Committee of Arrangements shall, if no sufficient reasons prevent, be mainly composed of seven members, of whom the Assistant Secretary shall be one, residing in the place at which the Association is to hold its next annual meeting; and shall be required to provide suitable accommodations for the meeting, to verify and report upon the credentials of membership, to receive and announce all essays and memoirs voluntarily communicated, either by members of the Association, or by others through them, and to determine the order in which such papers are to be read and considered.

The Committee of Publication, of which the Secresaries, Treasurer, and Librarian must constitute a part, shall have charge of preparing for the press, and of publishing and distributing such of the proceedings, transactions, and memoirs of the Association as may be ordered to be published in such manner as the Association may direct. The six members of this Committee, who have not the immediate management of the funds, shall also, in their own names as agents for the Association, hold the bond of the Treasurer for the faithful execution of his office, and shall annually audit and authenticate his accounts, and present a statement of the same in the annual report of the Committee; which report shall specify the character and cost of the publications of the Association during the year, the number of copies still at the disposal of the meeting, the funds on hand for further operations, and the probable amount of the assessment to be laid on each member of the Association for covering its annual expenditures.

VI.—FUNDS AND APPROPRIATIONS.

Funds shall be raised by the Association for meeting its current expenses and awards from year to year, but never with the view of creating a permanent income from investments. Funds may be obtained by an equal assessment of not more than ten dollars annually, on each of the delegates and permanent members; by voluntary contributions for specific objects; and by the sale and disposal of publications, or of works prepared for publication.

The funds may be appropriated for defraying the expenses of the annual meetings, including the necessary expenses of the Permanent Secretary in maintaining the necessary correspondence of the Association; for publication; for enabling the Standing Committees to fulfill their respective duties, conduct their correspondence, and procure the materials nec-

essary for the completion of their stated annual reports; for the encouragement of scientific investigation by prizes and awards of merit; and for defraying the expenses incidental to specific investigations under the instruction of the Association, where such investigations have been accompanied with an order on the Treasurer to supply the funds necessary for carrying them into effect.

VII.—PROVISION FOR AMENDMENT.

No amendment or alteration shall be made in any of these articles, except at the annual meeting next subsequent to that at which such amendment or alteration may have been proposed; and then only by the voice of three fourths of all the delegates in attendance.

Provided, however, that when an amendment is properly under consideration, and an amendment is offered thereto, germane to the subject, it shall be in order, and if adopted, shall have the same standing and force as if proposed at the preceding meeting of the Association.

And, in acknowledgment of having adopted the foregoing propositions, and of our willingness to abide by them, and use our endeavors to carry into effect the objects of this Association as above set forth, we have hereunto affixed our names.

NAMES OF MEMBERS.	RESIDENCE.	INSTITUTION REPRESENTED.

BY-LAWS.

I.—ORDER OF BUSINESS.

The order of business at the annual meetings of the American Medical Association shall at all times be subject to the vote of three-fourths of all the members in attendance; and, until permanently altered, except when for a time suspended, it shall be as follows, namely:

1st. The calling of the meeting to order by the President elected the preceding year, or, in his absence, by one of the Vice-Presidents.

2d. The report of the Committee of Arrangements on the credentials of members, after the latter have registered their names and addresses, and the titles of the institutions which they represent.

3d. The reception of members by invitation.

4th. The election of permanent members,

5th. The reading of notes from absentees.

6th. The hearing of the annual address of the President.

7th. The reception of the reports of all special committees and voluntary communications, and their reference to the appropriate sections.

8th. The appointment of the committee of one from each State represented, to nominate officers of the Association, and to fill the standing committees.

9th. The reading and consideration of the reports of the Standing Committees, of Publication, on Prize Essays, and of Chairmen of Sections.

10th. Resolutions introducing new business, and instructions to the permanent committees.

11th. The selection of the next place of meeting.

12th. The report of the Nominating Committee, and the election of officers of the Association.

13th. Reports from the several Sections.

14th. Reading of the minutes by the Secretary.

15th. Unfinished and miscellaneous business.

16th. Adjournment.

II.—SECTIONS.

The general meetings of the Association shall be restricted to the morning sessions; and the afternoon sessions, commencing at three o'clock, shall be devoted to the hearing of reports and papers and their consideration, in the following *Sections*.

1. Practical Medicine, Materia Medica, and Physiology.
2. Obstetrics and Diseases of Women.
3. Surgery and Anatomy.
4. State Medicine.
5. Ophthalmology, Otology and Laryngology.
6. Diseases of Children.
7. Dental and Oral Surgery.
8. Medical Jurisprudence.

On the second day of each annual meeting each Section shall nominate its own officers to serve for the next ensuing year, their duties to commence with the close of the annual meeting at which they are nominated, and to continue until their successors are appointed.

The Section on State Medicine shall be composed of one member from each State, one from the army and one from the navy of the United States, representing, as far as practicable, the State Boards of Health. The officers of this Section to be also designated by the Committee on Nominations.

The chairmen of the several Sections shall prepare and read in the general sessions of the Association, papers on the advances and discoveries of the past year in the branches of sciences included in their respective Sections; the reading of such papers not to occupy longer than forty minutes for each.

It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge, for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme for the use of all members attending the annual meeting. Such programme shall also contain the rules specified in the By-laws and Ordi-

nances concerning the consideration and disposal of all papers in the Sections.

No paper shall be read before either of the Sections, the reading of which occupies more than twenty minutes. Such papers shall be referred by the Section to sub-committees especially appointed for their examination. The sub-committees shall be allowed thirty days for such examination; at the end of which time they shall forward the papers to the Committee of Publication, with such recommendation as they may deem proper. The author of such papers, however, may read abstracts before the Section within the allotted twenty minutes. No member shall address the Section more than once upon the same subject, nor speak longer than fifteen minutes without unanimous consent.

All papers presented directly to the Association, and other matters, may, at the discretion of the Association, be referred to the various Sections for their consideration and report.

Prize Essays.—There shall be four annual prizes of two hundred and fifty dollars each, which shall be awarded at the close of the second year after announcement, as hereinafter explained, for strictly original contributions to medical and surgical progress.

It shall be the duty of the chairman of each of the following four Sections: 1. Practical Medicine, Materia Medica, and Physiology; 2. Obstetrics and Diseases of Women; 3. Surgery and Anatomy; 4. State Medicine, to appoint annually before the adjournment of the meeting of the Association three members of ability and good judgment, who shall constitute a Committee of Selection, and who shall, within thirty days thereafter, select and publicly announce for competitive investigation and report, a subject belonging to one or other of the branches of medicine included in the title of the Section.

It shall also be the duty of the chairman of each of the Sections mentioned to appoint annually a Committee of Award, consisting of three experts, who shall carefully examine the essays offered for competition, and, if any one shall be found worthy of the prize as a substantial contribution to medical knowledge, to recommend the same to the Association.

All essays placed by their authors for competition shall be in the hands of the chairman of the respective Committees of Award on or before the first day of January preceding the meeting of the Association at which the reports of the committees are required to be made.

All Prize Essays shall be considered as the property of the Association.

The names of the authors of the competing essays shall be kept secret from the committees by such means as the latter may provide.

Membership in either of the two committees shall not debar from membership in the other; nor shall membership in the Committee of Selection exclude a member from the privilege of offering a competing essay.

III.—STANDING COMMITTEES.

The following are the Standing Committees of the Association, to be filled by the Committee on Nominations, and to report at the next annual meeting subsequent to their appointment, namely, Committee of Arrangements, Committee of Publication, and Committee on American Medical Necrology.

The *Committee of Publication* shall append to each volume of the *Transactions* hereafter published, a copy of the Constitution, By-laws and Code of Ethics of the Association. It shall print conspicuously, at the beginning of each volume of the *Transactions* the following disclaimer. namely: The American Medical Association, although formerly accepting and publishing the reports of the various standing committees, holds itself wholly irresponsible for the opinions, theories or criticisms therein contained, except when otherwise decided by special resolution.

The *Committee on American Medical Necrology* shall consist of one member for each State and Territory represented in the Association, whose duty it shall be to procure memorials of the eminent and worthy dead among the distinguished physicians of their respective States and Territories, and transmit them to the chairman of this committee on or before the 1st of April of each and every year.

IV.—THE PUBLICATION OF PAPERS AND REPORTS.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Committee of Publication on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of the author.

Authors of papers are required to return their proofs within two weeks after their reception; otherwise they will be passed over and omitted from the volume.

Every paper received by this Association and ordered to be published, and all plates or other means of illustration shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

The Committee of Publication shall have full discretionary power to omit from the published *Transactions*, in part or in whole, any paper that may be referred to by the Association, or either of the Sections, unless specially instructed to the contrary by vote of the Association.

V.—ASSESMENTS.

The sum of five dollars shall be assessed, annually, upon each delegate to the sessions of the Association, as well as upon each of its permanent members, whether attending or not, for the purpose of raising a fund to defray necessary expenses. The payment of this sum shall be required of the delegates and members in attendance upon the sessions of the Association previously to their taking their seats and participating in the business of the sessions. Permanent members, not in attendance, shall transmit their dues to the Treasurer.

Any permanent member who shall fail to pay his annual dues for three successive years, unless absent from the country, shall be dropped from the roll of

permanent members, after having been notified by the Secretary of the forfeiture of his membership.

VI.—DELEGATES FROM THE MEDICAL STAFFS OF THE ARMY AND NAVY.

Delegates representing the medical staffs of the United States Army and Navy, shall be appointed by the Chiefs of the Army and Navy Medical Bureaus. The number of delegates so appointed shall be four from the army medical officers, and an equal number from the navy medical officers.

VII.—DELEGATES TO FOREIGN MEDICAL SOCIETIES.

The President shall be authorized annually to appoint delegates to represent this Association at the meetings of the British Medical Association, the American Medical Society at Paris, and such other scientific bodies in Europe or other foreign countries as may be affiliated with us.

VIII.—DUTIES OF MEMBERS.

No one shall be permitted to address the Association, except he shall have first given his name and residence, which shall be distinctly announced from the chair, and the members may be required to go forward and speak from the stand, but not more than ten minutes at one time.

No one appointed on a special committee who fails to report at the meeting next succeeding the one at which he is appointed, shall be continued on such committee or appointed on any other, unless a satisfactory excuse is offered.

IX.—CONDITION EXCLUDING REPRESENTATION.

No State or Local Medical Society, or other organized institution, shall be entitled to representation in this Association that has not adopted its Code of Ethics; or that has intentionally violated or disregarded any article or clause of the same.

X.—OF THE PREVIOUS QUESTION.

When the previous question is demanded, it shall take at least twenty members to second it; and when the main question is put under force of the previous question and negatived, the question shall remain under consideration the same as if the previous question had not been enforced.

XI.—JUDICIAL COUNCIL.

A council, consisting of twenty-one members, shall be appointed by the Nominating Committee, whose duty it shall be to take cognizance of, and decide, all questions of an ethical or judicial character that may arise in connection with the Association. Of the twenty-one members of the council first appointed the seven first named on the list shall hold office one year, and the second seven named shall hold office two years.

With these exceptions the term of office of members of the council shall be three years, seven being appointed by the Nominating Committee annually.

The said council shall organize by choosing a President and Secretary, and shall keep a permanent record of its proceedings. The decisions of said council on all matters referred to it by the Association shall be final, and shall be reported to the Association at the earliest practical moment.

All questions of a personal character, including complaints and protests, and all questions on credentials, shall be referred at once, after the report of the Committee of Arrangements or other presentation, to the *Judicial Council*, and without discussion.

XII.—NEW BUSINESS.

No new business, resolutions by members, etc., shall be introduced at the general session of the Association except on the first and fourth days of meetings.

XIII.—OFFICERS AND COMMITTEES.

In the election of officers and appointment of committees by this Association and its President, they shall be confined to members and delegates present at the meeting, except in the Committee of Arrangements.

ORDINANCES.

Resolved, That the several Sections of this Association be requested, in the future to refer no papers or reports to the Committee of Publication, except such as can be fairly classed under one of the three following heads, namely: 1. Such as may contain and establish *positively* new facts, modes of practice, or principles of real value. 2. Such as may contain the results of well-devised original experimental researches. 3. Such as present so complete a review of the facts on any particular subject as to enable the writer to deduce therefrom legitimate conclusions of importance.

Resolved, That the several sections be requested, in the future, to refer all such papers as may be presented to them for examination by this Association, that contain matter of more or less value, and yet cannot be fairly ranked under either of the heads mentioned in the foregoing resolution, back to their authors with the recommendation that they be published in such regular medical periodicals as said authors may select, with the privilage of placing at the head of such papers, "Read to the Section of the American Medical Association on the day of 18 ." (Vide *Transactions*, vol. xvi, p. 40.)

Resolved, That, instead of yearly reprinting the list of members of the American Medical Association, the Committee of Publication be instructed to prepare and print in the *Transactions* an alphabetical catalogue triennially, containing a complete list of the Permanent Members, with their names in full, designating their residences, the year of their admission, the offices they may have held in the Association, and, in case of death or rejection, the date thereof. (Vide *Transactions*, vol. xvii, p. 33.)

Resolved, That no report or other paper shall be presented to this Association unless it be so prepared that it can be put at once into the hands of the permanent Secretary, to be transmitted to the Committee of Publication. (Vide *Transactions*, vol xvii. p. 27.)

Resolved, That the Permanent Secretary hereafter and from this date be authorized to draw a warrant upon the Treasurer for the expenses incurred in his attendence upon each session of the Association, and that the Treasurer is hereby instructed to pay the same. (Vide *Transactions*, vol. xviii, p. 42.)

Resolved, That those gentlemen who desire to report on special subjects, and will pledge themselves to report at the next meeting, be requested to send their names, and the subjects on which they desire to report, to the Permanent Secretary. (Vide *Transactions*, vol. xix, p. 42.)

Resolved, That hereafter the necessary expenses for rent of hall for general meetings and rooms for sections to accommodate the annual meetings, and the necessary expenses for cards of membership, be paid out of the treasury of the Association. (Vide *Transactions*, vol. xix, p. 42).

Resolved, That this Association recognizes specialties as proper and legitimate fields of labor.

Resolved, That specialists shall be governed by the same rules of etiquette as have been laid down for general practitioners.

Resolved, That it shall not be proper for specialists publicly to advertise themselves such, or to assume any title not specially granted by a regularly chartered college.

Resolved, That private handbills addresed to members of the medical profession, or by cards in medical journals, calling the attention of professional brethren to themselves as specialists, be declared in violation of the Code of Ethics of the American Medical Association. (Vide *Transactions*, vol. xx, p. 28.)

Resolved, That a Committee of one be appointed, residing at Washington, to render the Librarian of Congress such assistance as the interests of the Association may require. (Vide *Transactions*, vol. xx, p. 29.)

Resolved, That the Committee of Arrangements for the next ensuing meeting of this Association, and for all meetings thereafter, be directed to prepare a list of members present on a separate roll, for convenience and accuracy in calling the ayes and nays when the same shall be demanded. (Vide *Transactions*, vol. xxi, p. 60.)

Resolved, That each year, until otherwise ordered, the President-elect and the Permanent Secretary be directed to appeal in the name of the Association, to the authorities of each State where no State Board of Health exists, urging them to establish such boards. (Vide *Transactions*, vol. xxvi, p. 50.)

Resolved, That the Permanent Secretary is hereby directed annually to report the names of States where boards of health exist, and also of those which decline to establish them; said report to form a part of the annual proceedings of the Association. (Vide *Transactions*, vol. xxvi, p. 50.)

Resolved, That members of the medical profession who in any way aid or abet the graduation of medical students in irregular or exclusive systems of medicine, are deemed thereby to violate the spirit of the ethics of the American Medical Association. (Vide *Transactions*, vol. xxvii, p. 48.)

Resolved, 1. That the American Medical Association adopts the International Metric System, and will use it in its Transactions. (Vide *Transactions*, vol. xxx, p. 44.)

2. Requests that those who present papers at its future meetings employ this system in their communications, or reprints thereof. (Vide *Transactions*, vol. xxx, p. 44.)

3. Requests the medical boards of the hospitals and dispensaries to adopt the Metric System in prescribing and recording cases; and that the Faculties of the medical and pharmaceutic schools adopt it in their didactic, clinical, or dispensing departments. (Vide *Transactions*, vol. xxx, p. 44.)

Resolved, That the President and Secretary of this Association are directed to annually petition Congress to enact a law which shall permit every person engaged in a scientific pursuit to import for his own use, free of duty, any one book or instrument appertaining to his special pursuit. (Vide *Transactions*, vol. xxx, p. 45.)

Resolved, That the above-named officers are further directed to urge the State Medical Societies and their auxiliary branches to aid this Association in accomplishing this purpose, by petitions to Congress, and by otherwise influencing Congressmen. (Vide *Transactions*, vol. xxx, p. 45.)

Decision by Judicial Council: A gentleman who is not in affiliation with a County, District, or State Medical Society, where such organizations exist, is *not* entitled to be registered as a permanent member upon the claim of having been a delegate from a body not now entitled to representation in this body. (Vide *Transactions*, vol. xxx, p. 57.)

Resolved, *First.* That a committee of five be appointed by the President of the Association, to be called the Standing Committee on "Atmospheric Conditions, and their Relations to the Prevalence of Diseases."

Second. That that committee be authorized to select such places as will best indicate atmospheric conditions in the more important climatic and sanitary districts of the United States—not less than six, nor more than twelve — and establish therefor a means for continuous observation and record of all appreciable conditions of atmosphere, according to the most approved methods, and of the origin and prevalence of all acute diseases.

Third. That the Committee, through their chairman, be authorized to draw upon the Treasurer of this Association for such sums as may be found necessary for the proper execution of the work assigned to it, the aggregate amount not to exceed $500, during the ensuing year, and that a detailed report of all sums drawn and expenditures made must be presented at the next annual meeting of the Association. (Vide *Transactions*, vol. xxxii, p. 35.)

CODE OF MEDICAL ETHICS.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ART. I.—*Duties of physicians to their patients.*

§ 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to

be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring, because there is no tribunal other than his own conscience to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick with due impressions of the importance of their office; reflecting that the ease, the health, and the lives of those committed to their charge, depend on their skill, attention, and fidelity. They should study, also, in their deportment, so to unite *tenderness* with *firmness*, and *condescension* with *authority*, as to inspire the minds of their patients with gratitude, respect, and confidence.

§ 2. Every case committed to the charge of a physician should be treated with attention, steadiness, and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligation of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and necessity of this obligation are indeed so great, that professional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

§ 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease — to meet promptly every change which may occur, and also tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

§ 4. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words or the manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

§ 5. A physician ought not to abandon a patient because the case is deemed incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of a fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance, under such circumstances, would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to, all pecuniary consideration.

§ 6. Consultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy, and more enlarged views in practice.

§ 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, suffering under the consequences of vicious conduct, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ART. II.—*Obligations of patients to their physicians.*

§ 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, certainly have a right to expect and require, that their patients should entertain a just sense of the duties which they owe to their medical attendants.

§ 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

§ 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure, or to any pursuit incompatible with his professional obligations. A patient should, also, confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiarities of constitution, habits, and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trivial cases, for the most fatal results often supervene on the slightest accidents. It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

§ 3. Patients should faithfully and unreservedly communicate to their physician the supposed cause

of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes, and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delicacy to prevent their disclosing the seat, symptoms, and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

§ 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories, than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

§ 6. The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink, and exercise. As patients become convalescent they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever, that may be recommended to them by the self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallible remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious, by contravening the plan of treatment adopted by the physician.

§ 7. A patient should, if possible, avoid even the *friendly visits of a physician* who is not attending him—and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when applied singly, yet conjointly they are very likely to be productive of disastrous results.

§ 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

§ 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for, by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

§ 10. A patient should, after his recovery, entertain a just and endearing sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgement can repay or cancel them.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER, AND TO THE PROFESSION AT LARGE.

ART. I.—*Duties for the support of professional character.*

§ 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness. He should, therefore, observe strictly such laws as are instituted for the government of its members; should avoid all contumelious and sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

§ 2. It is not in accord with the interests of the public or the honor of the profession that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be specially concerned with, the graduation of persons whom they have good reason to believe intend to support and practice any exclusive and irregular system of medicine.

§ 3. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required, than the medical; and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he cannot command their respect and confidence, and to both, because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding; and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye, and an unclouded head may be essential to the well-being, and even to the life, of a fellow-creature.

§ 4. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or handbills, inviting the attention of individ-

uals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

§ 5. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

ART. II.—*Professional services of physicians to each other.*

§ 1. All practitioners of medicine, their wives, and their children while under the paternal care, are entitled to the gratuitous services of any one or more of the faculty residing near them, whose assistance may be desired. A physician afflicted with disease is usually an incompetent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consanguinity, is rendered peculiarly dear to him, tend to obscure his judgment, and produce timidity and irresolution in his practice. Under such circumstances, medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and an honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ART. III.—*Of the duties of physicians as respects vicarious offices.*

§ 1. The affairs of life, the pursuit of health, and the various accidents and contingencies to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy, which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period all the pecuniary obligations for such services should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent and long-continued exercise of this fraternal courtesy without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

In obstetrical and important surgical cases, which give rise to unusual fatigue, anxiety and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ART. IV.—*Of the duties of physicians in regard to consultations.*

§ 1. A regular medical education furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a licence to practice from some medical board of known and acknowledged respectability, recognized by the Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and of the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

§ 2. In consultations, no rivalship or jealousy should be indulged; candor, probity, and all due respect should be exercised toward the physician having charge of the case.

§ 3. In consultations, the attending physician should be the first to propose the necessary questions to the sick; after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of all the faculty attending, and by their common consent; and no *opinions* or *prognostications* should be delivered which are not the result of previous deliberation and concurrence.

§ 4. In consultations, the physician in attendance should deliver his opinion first; and when there are several consulting, they should deliver their opinions in the order in which they have been called. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variation, and the reasons for it, ought to be carefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physi-

cian if he is sent for in an emergency, when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

§ 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together, and this is generally practicable, for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere, and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe; but if it be the consulting one, he should retire, except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in *writing* and *under seal*, to be delivered to his associate.

§ 6. In consultations, theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

§ 7. All discussions in consultation should be held as secret and confidential. Neither by words nor manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants—they must equally share the credit of success as well as the blame of failure.

§. 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concessions, as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence, a third physician should, if practicable, be called to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in which he is most willing to confide, But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

§ 9. As circumstances sometimes occur to render a *special consultation* desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulously guard against all future unsolicited attendance. As such consultations require an extraordinary portion of both time and attention, at least a double honorarium may be reasonably expected.

§ 10. A physician who is called upon to consult, should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified as far as it can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentions or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

Art. V.—*Duties of physicians in cases of interference.*

§ 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

§ 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made—no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

§ 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

§ 4. A physician ought not take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances, no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience immediate relief, and, as many diseases are naturally protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

§ 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

§ 6. It often happens in case of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

§ 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on the return or recovery of the regular attendant and with the consent of the patient, to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attack of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

§ 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction unless it be expressly desired; and, in this last case, to request an immediate consultation with the practitioner previously employed.

§ 9. A wealthy physician should not give advice *gratis* to the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusively beneficent one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

§ 10. When a physician who has been engaged to attend a case of midwifery is absent, another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ART. VI.—*Of differences between physicians.*

§ 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a *court-medical.*

§ 2. As peculiar reserve must be maintained by physicians toward the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of medical men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject-matter of such differences nor the adjudiction of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

ART. VII.—*Of pecuniary acknowledgments.*

Some general rules should be adopted by the faculty, in every town or district, relative to *pecuniary acknowledgments* from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ART. I.—*Duties of the profession to the public.*

§ 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene, and legal medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement, and dietaries of hospitals, asylums, schools, prisons, and similar institutions; in relation to the medical police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

§ 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroners' inquests and courts of justice on subjects strictly medical—such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to made a *post-mortem* examination, it is just, in consequence of the time, labor, and skill required, and the responsibility and risk they incur, that the public should award them a proper honorarium.

§ 3. There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood, and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to

serve on juries, to perform militia duty, or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances, such professional services should always be cheerfully and freely accorded.

§ 4. It is the duty of physicians, who are frequent witnesses of the enormities committed by quackery, and the injury to health and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in Colleges of Pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ART. II.—*Obligations of the public to physicians.*

§ 1. The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education—and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

EXPLANATORY DECLARATIONS.

WHEREAS, Persistent misrepresentations have been and still are being made concerning certain provisions of the Code of Ethics of this Association, by which many in the community, and some even in the ranks of the profession are led to believe those provisions exclude persons from professional recognition simply because of differences of opinions or doctrines; therefore

1. *Resolved*, That clause first, of Art. IV, in the National Code of Medical Ethics, is not to be interpreted as excluding from professional fellowship, on the ground of differences in doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any other article or clause of the said Code of Ethics that interferes with the exercise of the most perfect liberty of individual opinion and practice.

2. *Resolved*, That it constitutes a voluntary disconnection or withdrawal from the medical profession proper, to assume a name indicating to the public a sectarian, or exclusive system of practice, or to belong to an association or party antagonistic to the general medical profession.

3. *Resolved*, That there is no provision in the National Code of Medical Ethics in any wise inconsistent with the broadest dictates of humanity, and that the article of the Code which relates to consultations cannot be correctly interpreted as interdicting, under any circumstances, the rendering of professional services whenever there is a pressing or immediate need of them. On the contrary, to meet the emergencies occasioned by disease or accident, and to give a helping hand to the distressed without unnecessary delay, is a duty fully enjoined on every member of the profession, both by the letter and the spirit of the entire Code.

But no such emergencies or circumstances can make it necessary or proper to enter into formal professional consultations with those who have voluntarily disconnected themselves from the regular medical profession, in the manner indicated by the preceding resolution.

N. S. DAVIS, of Chicago,
A. Y. P. GARNETT, of Washington,
H. F. CAMPBELL, of Augusta, Ga.,
AUSTIN FLINT, of New York,
J. B. MURDOCK, of Pittsburgh.

On motion of Dr. Brodie, the resolutions were unanimously adopted.

On motion of Dr. Keller, it was unanimously agreed that the resolutions be added as an explanatory addendum in all future publications of the Code.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

MISCELLANEOUS.

ANCIENT IRISH MEDICAL JURISPRUDENCE.—DR. MAPOTHER, in the *Dublin Journal* of *Medical Science*, says that the Brehon Code of Laws, dating from the fifth century, and the oldest in Europe, deals largely with medical affairs. They refer to surgeons who lived before the second century. They carefully provide for distress—that is, taxation—for the support of the son taken from his dead mother's breast, for the incurable, for the care of the sick as to food, bedding, nursing, and a house with the wind blowing in all quarters and with a stream close by. The medical man had power to keep from the house

"fools and female scolds." The mode of distraint in case of a physician was, "Let his horse-whip and his probes be taken up. If he has not the proper number of such things, let a thread be tied about the finger next his little finger." The unqualified physician was to be fined if he operated without giving a guarantee against damages, or without giving notice that he was not qualified. The practitioner was to be quite exempt. An impartial physician was to be the judge of the mode of treatment and of the due recompense. The fees, always paid with oxen, the current coin, were most exactly proportioned to the rank of the patient.

STERILIZED HYPODERMIC SOLUTIONS. — DR. A. POEHL gives the following method in *Pharmeceutishe Zeitung:* Water, which has been re-distilled from a mixture of about 2 per cent. of caustic soda and permanganate of potash (the first portions of the distillate, if showing traces of ammonia when tested by Nessler's reagent, having been rejected), is mixed with about 1 per cent. of pure chloroform. The alkaloidal salt is to be added and the solution heated in a flask, furnished with a thermometer, to a temperature of 70° to 62° C. until all traces of chloroform have been dissipated. The resulting solution is to be filtered through paper which has been folded ready for use, and afterwards been sterilized by heating to a temperature of 125° to 130° C. in an air-chamber or drying-oven, for at least one hour. Sufficient of the re-distilled water is to be poured through the filter to make the filtrate either weigh or measure accurately the desired quantity. Last, but by no means least, the solution is to be preserved in vials which have been washed with some of the same water and dried at a temperature of 125° to 130° C. or over. The cork used should also be washed in the re-distilled water, and dried in the same manner as the vials. Solutions thus prepared have been kept for months without showing signs of change.

[A still better way is to use soluble hypodermic tablets, dissolving them in clear water brought to the boiling point in a spoon.]

TO DISTINGUISH OLEOMARGARINE FROM BUTTER. —J. Horstler recommends the following procedure: A piece of oleomargarine, the size of a hazelnut, is placed in a test-tube, and the end made air-tight. Into another test-tube a like quantity of butter is treated in the same way. When both test-tubes are held in the hand the oleomargarine soon liquefies, forming a clear solution; whilst butter requires double the time for solution, and when dissolved is not so clear as the oleomargarine solution. When the tube is filled one-third with ether, the oleomargarine is easily dissolved, and does not produce any turbidity or precipitate on the addition of alcohol. Butter when treated in like manner yields a precipitate.—*Microscope*, Dec., 1886.

DETROIT BOARD OF HEALTH.—An effort is to be made to abolish the health board of Detroit, Michigan, and create a Health Commissionership endowed with full power.

NITRITE OF AMYL IN OPIUM POISONING.—Nitrite of amyl has recently given excellent results in a case of opium poisoning in which belladonna failed, and when the patient was thought to be beyond medical aid.

UNIVERSITY OF MICHIGAN.—The Board of Regents of the Michigan University has decided to ask the legislature for $75,000 with which to build and furnish a new laboratory for the use of the four departments of physics, hygiene, microscopy and physiology.

DR. G. ADLER BLUMER, first Assistant Physician of the Utica Asylum for the Insane, has been unanimously elected Superintendent of the Asylum, to fill the vacancy caused by the death of Dr. John P. Gray. Dr. Blumer is a native of England, and was graduated from the Medical Department of the University of Pennsylvania in 1879.

THE COMMITTEE FOR COLLECTIVE INVESTIGATION. —We are in receipt of the following communication: In the session of the International Medical Congress of Copenhagen I was appointed the American member of the Committee for Collective Investigation, and permitted to select a colleague in the United States. Thus the pamphlets and circulars prepared by, or with the authority of the general Committee in London, were distributed under the names of N. S. Davis, and the undersigned. They were made returnable to my address on January 1, 1887. As I have resigned my position on the above Committee, I require the permission and privilege of notifying, through your journal, the holders of the above pamphlets that they ought to be sent to N. S. Davis, M.D., 65 Randolph Street, Chicago, Ill., instead of the undersigned. Very respectfully,

A. JACOBI, M.D.

110 W. 34th St., New York, Dec. 19, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 11, 1886, TO DECEMBER 17, 1886.

Major Jno. W. Williams, Surgeon, ordered for duty at Jackson Bks., La. S. O. 205, Div. Atlantic, Dec. 14, 1886.

Major B. F. Pope, Surgeon, relieved from duty in the office of the Surgeon-General of the Army, and will report in person to the President of the Army Medical Examining Board in New York City for duty as member and Recorder of the Board. S. O. 285, A. G. O., Dec. 9, 1886.

Pope, Benj. F., Major and Surgeon, so much of S. O. 285, A. G. O., Dec. 9, 1886, as directs him to report in person to the President of the Army Medical Examining Board, New York City, for duty as member and Recorder of the Board, is revoked. S. O. 287, A. G. O., Dec. 11, 1886.

Capt. Joseph K. Corson, Asst. Surgeon, leave of absence extended seven days. S. O. 288, A. G. O., Dec. 13, 1886.

First Lieut. Chas. C. Barrows, Asst. Surgeon, granted leave of absence for two months, to take effect when his services can be spared by his post commander. S. O. 285, A. G. O., Dec. 9, 1886.

First Lieut. Geo. F. Wilson, Asst. Surgeon, granted leave of absence for one month, with permission to apply to Hdqrs. Div. of the Missouri for an extension of twenty days, to take effect about Dec. 15, 1886. S. O. 138, Dept. Dak., Dec. 1, 1886.

First Lieut. R. R. Ball, Asst. Surgeon, ordered for duty at Ft. Riley, Kans. S. O. 125, Dept. Mo., Dec. 13, 1886.

OCT 2 1934

UNIVERSITY OF ILLINOIS

UNIVERSITY OF ILLINOIS-URBANA
3 0112 098017707